



**Cape Peninsula  
University of Technology**

**FACTORS AFFECTING FINANCIAL SUSTAINABILITY OF WATER AND  
SEWERAGE PROVISION IN CAPE TOWN, SOUTH AFRICA**

by

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## **DECLARATION**

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## **ABSTRACT**

Financial sustainability of water and sewerage provision is undermined by consumers' inability and reluctance to pay service fees. Consequently, the escalation of operational and maintenance costs of water and sewerage provision is a major challenge facing South African municipalities. This study examines the provision of water and sewerage services and presents a strategic framework to manage revenue collection to achieve water and sewerage provision financial sustainability. The study applied interpretive epistemology research method. Content analysis was used to collect and analyse data for an improved understanding of service provision and revenue collection mantra. Unlike the other method such as the exploratory research method that provides a description of the observed phenomenon, an interpretive epistemology methodology provides deeper insights into management strategies that are required in order to achieve sustainable water and sewerage provision. The main objective of this study was to investigate factors affecting financial sustainability of water and sewerage provision in Cape Town. The qualitative data were analysed using content method of analysis to gain better meaning of the phenomenon being studied.

The results show that although the water and sanitation department of the participating organisation is making efforts to generate revenue through implementing water and sanitation services payments, there are some residents who refuse to pay for services, resulting in revenue loss. The other reason for loss of revenue is unaccounted water which is the focus of the water and sewerage, demand management and strategy section; this is as a result of leaks, illegal connections, unregistered car wash bays, unmetered connections and informal settlement areas which do not get enough subsidies. The reasons advanced for unwillingness to pay for water and sanitation services by consumers were unemployment, poverty, unequal distribution of services and general ignorance. This study has found evidence of a reluctance toward service payment by participating consumers – requiring strategies to encourage rates payments.

**Key terms**

Sustainability, financial sustainability, maintenance and operational costs, management framework, consumers, revenue management, service provision, municipality, tariffs, Cost recovery.

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## **DEDICATION**

I dedicate this mini thesis to my late grandmother

Nofezile Beda

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## **GLOSSARY**

<b>ACRONYMS</b>	<b>DEFINITION</b>
ANC	African National Congress
CCT	City of Cape Town
DA	Democratic Alliance
DWAF	Department of Water affairs and Forestry
DWQ	Drinking Water Quality
FFC	Financial and Fiscal Commission
FSRB	Financial Sustainability Review Board
GDP	Gross Domestic Product
IDP	Integrated Development Plan
ISO	International Organization for Standardization
MDG	Millennium Development Goals
NSW	New South Wales
OECD	Organisation for Economic Co-operation and Development
PwC	PricewaterhouseCoopers
SALGA	South African Local Government Association
USD	United States Dollar
WCWDM	Water and Sanitation Water Demand Management and Strategy
WHO	World Health Organisation
WSA	Water Service Authority
WSDP	Water Services Development Plan
WTP	Water Treatment Plant
WTW	Water Treatment Works
WWTW	Wastewater Treatment Works

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Problem Background**

The Constitutional structure of South Africa formed a national, provincial and local dimensional system of government, with separate spheres of government. Each dimension national, provincial and local has legislative and executive self-government powers embedded by the Constitution. These government spheres form a unitary decentralised system which is interdependent and interrelated to each other with political power, administrative accountability and fiscal responsibility (USAID, 2009). Municipality has a prerogative to manage its own local government matters together and improve its own creativities taking in consideration national and provincial regulation.

Considering the above legislative mandate, local government should, therefore, serve as an unbiased and accountable base to its local citizens. Therefore it is required of municipality to guarantee and safeguard provision of society based services in a sustainable manner together ensuring further social and economic development. Municipalities should uphold conducive and vigorous atmosphere for service delivery and economic development. Finally, inspire community and organisational involvement in matters of local government. Consumers who are unable and/ or unwilling to pay for water and sewerage provision will result in financial unsustainability at local government level.

According to Alence. (2002), the inability and unwillingness of consumers to pay municipal bills generates municipal financial difficulties and jettison and/ or weakens financial sustainability of water and sewerage provision. Some of the studies on financially sustainable of municipal service delivery, have recommended that communities have to be involved in deliberations on provision of basic needs and infrastructure repairs (Godfrey & Obika 2004 and Kyessi. 2005 and Morudu. 2017). Municipalities needs to ensure public participation is guaranteed whenever tariffs and willingness by the poor to pay for services (Kayaga et al. 2003; Whittington et al. 1990; World Bank. 1993).

Financial sustainability that is used in local government is the capability to accomplish and meet financial obligations and spending commitments now and well in to the future. To understand financial sustainability, there is a need to identify and analyse factors that make



water and sewerage provision financially unmanageable. Overcoming the challenge of the lack of willingness to pay municipal bills will strengthen municipalities' efforts to increase financial revenues (Botes & Pelsner. 2001). The intensification in efforts to increase financial revenue is in line with the prevailing international best practice, utilised by developmental agencies in fundraising in order to make up for shortfalls in project financing (Booyesen. 2001a). Pieters. (2015), connects the success of service delivery in local governments to a sound revenue system as the provision of goods and services is mainly dependent on the availability of funds.

The exercise of improved cost recovery is also consistent with South African Government White Paper established by the Water and Sanitation (DWAF. 1994a) which states recurring operational and maintenance costs of water and sewerage services have to be recovered and be provided for. The successful practice of cost recovery would make provision for budgetary resources constraints on capital expenditure, allowing for the roll out of water and sewerage services to all South African households (DWAF. 1994b).

The report by DWAF. (1994b) notes that service cost recovery will allow for the achievement of financial sustainability which is key to service delivery by all municipalities. This is supported by Kumar. (2013), cited in Pieters. (2015), that non-payment by consumers is one of the challenges that affects municipalities' capacity in improving their revenue base. Above all, financial sustainability has been hampered and jeopardised by the poor cost recovery record that has resulted in municipalities' inability to expand infrastructure. One of the contributing factors to these problems is that as a result of unemployment and poverty, consumers are unable to pay for services.

Furthermore, because of poor performance by municipalities in providing the services, consumers are not willing to pay. For example, billing inaccuracy together with weak credit control measures, lack of financial management and accounting skills capacity all contribute to the refusal to pay for services. Booyesen. 2001 and Botes & Pelsner. 2001 have agreed municipal lack of payment of services has been on the spotlight by many researchers.

Most of these studies, however, were instituted during early to mid-2000s. Changing times, therefore, require municipalities to carry out new and comprehensive updates on factors affecting financial sustainability in municipalities. Providing free basic services to underprivileged households and infrastructure investment has proved to be an important economic activity, economic advancement and poverty alleviation (National Treasury. 2008).

In order for municipalities to effectively provide the services they rely on two main sources of revenue, namely national fund allocation and its own revenue generation.

Nevertheless, according to Alence. (2002) although national government funding and municipal revenue are sufficient, water and sewerage provision still remains financially unsustainable. According to Alence. (2002), in the past, most researchers have concentrated on investigating non-payments of service fees by consumers. This study, therefore, will examine the financial sustainability factors affecting water and sewerage provision in Cape Town.

## **1.2 Statement of the Problem**

Water and sewerage provision is currently financially unsustainable. South African municipalities are providing water and sewerage services with high maintenance and operational costs, with relatively few households and businesses that are able and/ or committing to pay their full accounts timeously (DWAF. 2002). Chetty. (2015), concedes that culture of non-payment of services in South Africa continues to pose a serious financial challenge to local government even after 20 years into democracy. The financial gap between the maintenance and operational costs and fewer collections or paid bills, limits municipal operational efficiency and effectiveness. Worldwide there is over one billion people who have no access to safe drinking water, together with more than 2.5 billion people with inadequate sanitation (USAID. 2009). According to USAID. (2009), in Africa alone 300 million and 313 million people do not have access to safe drinking water and sanitation respectively.

According to Syme. (1998) and Smit. (1999) investigations into billing and payment practices revealed that although favourable tariff schedule structures, non-payment penalties, payment incentives and other customer relations aspects were introduced by local government in municipalities, these interventions did not yield any positive results, leading to financial unsustainability. Alence. (2002a) argued that the water sector in South Africa has conducted research that identifies factors such as non-payment of services and high maintenance and operational cost that appeared to affect outcomes of recovery of cost eventually leading to financial unsustainability. Due to financial constraints, water and sewerage systems deteriorate and maintenance costs are increasing, leading to increasing inability by municipalities' to meet water and sewerage services demands.

### **1.3 Purpose Statement**

This study's main purpose of this study is to understand factors affecting financial sustainability of water and sewerage provision in Cape Town. This study will also seek to understand the challenges that the Cape Town municipality is facing in achieving financial sustainability. Lastly, the study will determine strategies to be devised in order to achieve financial sustainability and the enhancement of water and sewerage provision in municipalities. Alence. (2002b) argued that operational and maintenance cost recovery is crucial in order for municipalities to be able to continually provide water and sewerage services. Auditor General Report. (2018), indicates that most municipalities put themselves under financial distress due to unreasonable spending.

### **1.4 Research Questions**

- What are financial sustainability factors affecting water and sewerage provision in Cape Town?
- What are the challenges that the Cape Town municipality is facing in moving towards financial sustainability?
- What are financial sustainability strategies that could be put in place to enhance water and sewerage provision?

### **1.5 Research Objectives**

This study's main objective is to understand factors that are affecting financial sustainability of water and sewerage provision in Cape Town.

#### **1.5.1 Specific Objectives of this Study**

- To understand factors that affects the financial sustainability of water and sewerage provision in Cape Town.
- To identify challenges that the municipality is facing in moving towards financial sustainability of water and sewerage provision.
- To propose financial sustainability strategies that may be used in order to enhance water and sewerage provision.

## **1.6 Research Methodology and Design**

The researcher has used the interpretive epistemology research in this study. According, to Saunders *et al.* (2012a), the interpretive epistemology research method aims to offer insights into how a given phenomenon is interpreted and understood, unlike an alternative method such as the exploratory research method that provides a description of the observed phenomenon. Usually, phenomena such as factors affecting financial sustainability of water and sewerage provision relates to experiences of factor significance – such as economic recession, or the development of an understanding of the impact of the recession on the inflation of cost of services and increase in service charges. According to Denzin & Lincoln. (2005) the interpretive method is compatible with qualitative research design. In this study the researcher has used qualitative research approach to gather qualitative data using convenience sampling method with selected respondents in water and sanitation department. The data collection instrument used to gather data from City officials were interview questionnaires.

### **1.6.1 Qualitative Research Design**

This study employed qualitative research design in order to gather qualitative data from municipal officials (informants) by means of semi structured interviews. Systematized interviews afforded the canvasser an opportunity to probe the responses of respondents. Senior management at executive level were afforded an opportunity to respond to questions as their input enhance understanding of the financial sustainability and challenges facing the water and sanitation department. An understanding of financial challenges allowed the researcher to ask appropriate questions concerning factors affecting financial sustainability during interviews.

### **1.6.2 Population**

The population from whom the data was collected comprised selected executive management officials within the Water Services department. 14 executive management officials include the directors of Water and Sanitation as well as Finance. The population also includes the community of Khayelitsha with the population size of 391 749 (Statistic South Africa. 2011). The researcher has observed 500 activities around Khayelitsha that contribute to financial unsustainability and/ or initiatives designed to achieve financial sustainability.

### **1.6.3 Sampling**

Convenience sampling was utilised in this study. According to Saunders *et al.* (2012b), convenience sampling refers to random selection because of easy accessibility and availability in order to obtain a sample. McMillan and Schumacher. (2006a), alluded to the fact that although, expediency sampling is a less rigorous technique, it is widely used in many qualitative studies. Credibility given to findings from convenience samples is, however, often very little. The sample comprises conveniently selected informants, which are the senior management official of the water services department of the municipality.

### **1.6.4 Semi Structured Interviews**

Primary data was collected by means of interviewing senior officials of the water and sanitation department, including executive management for finance and revenue directorates, using semi structured interviews. To gain in-depth knowledge about factors affecting financial sustainability of water and sewerage provision the researcher opted for semi structured interview so as to ask open-ended questions. This researcher took notes, used transcriptions and audio recordings in order to capture data during interviews.

Interview recordings guaranteed rigorous generation of data and analysis (Schwandt. 2007a). According to MacMillan and Schumacher. (2006b) greater latitude is given to the researcher in asking broad questions which facilitate a high degree of impartiality and consistency. Semi structured interviews are important as they provide the researcher with a sense of the subjective and socially constructed meaning expressed about the factors affecting financial sustainability of water and sewerage provision that is being considered. Accordingly, collecting data by means of interviews becomes the essential method in a circumstance study, as most circumstance studies concern themselves with the affairs of human beings that should be described and construed through the judgements of research participants. Furthermore, well-informed interviewees can provide valuable understandings into a phenomenon (Yin. 2003a).

## **1.7 Data Analysis and Interpretations**

Content analysis methods of analysis were used to analyse data. According to Schwandt. (2007b), content analysis permits sequential influences and the sequencing of proceedings as told by the storyteller, to be conserved, with the possibility of deep, thoughtful and supportive

analysis. Schwandt. (2007b), further argues that analysis of qualitative data could be approached from either deductive or inductive perspectives.

Qualitative data collection and analysis is interrelated and interactive in nature and has to be recognised in that manner. Furthermore, social interpretation is essential for qualitative research and they turn to be vague, flexible and intricate compared to quantitative data. Data meanings in qualitative investigation, is therefore, principally derived from words unlike from quantitative data where meanings are resultant from figures. Analysing qualitative data requires great care to be taken because words could have meanings that are multiple as well as meanings that are unclear hence greater clarification care is necessary (Lee. 1993).

## **1.8 Ethical Considerations**

In undertaking this study the following ethical measures were observed: obtaining permission from the municipality and informants to conduct face to face interviews. Ethical principles like respect, beneficence and justice have been upheld in undertaking this study.

Information about the municipality and from the informants were treated with absolute concealment and were only utilised for the objective of the study. Namelessness and confidentiality of the informants were guaranteed.

The researcher has respected the dignity and autonomy of the municipality and informants. Once the proposal was approved, the process of requesting access to the secondary documentation and permission to interview informants commenced. A letter was written to the director of Water and Sanitation to request access to secondary documentation. The desire to participate in a research study depends upon informants' willingness to share their experience (Yin. 2003b). Since this was a qualitative study which is commonly conducted in surroundings that involve people participating in their day to day environment, a request to conduct interviews was necessary. This required the researcher to be aware of issues of ethics that might have been consequent from such collaboration.

## **1.9 Significance of the Research**

This study will be important in the sense that it will provide the latest knowledge on factors affecting financial sustainability and seeks to ensure continuous delivery of water and sewerage services in Cape Town. Furthermore, this study will provide municipalities with knowledge

that may be used to establish better administration, credit control and debt supervision which will enhance continuous provision of water and sewerage services.

This study comes at a time when we are observing high levels of service delivery protests throughout South Africa. This study will provide municipal policy-makers an understanding of the extent of municipal financial sustainability of water and sewerage provision. Financial feasibility is a serious component in the legislative-prescribed roles and tasks. All government spheres are aiming to ensure financial local government viability and sustainability (Peters. 2011). Financial sustainability is also ensuring that the municipalities' plans and budget procedures are founded on realistic prospects of income collection.

### **1.10 Delineation of Research**

The investigation is limited to the Water and Sanitation department in Cape Town.

### **1.11 Limitations**

- This research centres on the water and sanitation department in Cape Town. The findings might not be representative to other municipalities and business sectors.
- The rationale for choosing the municipality within the Cape Town is travel cost and accessibility.
- The other limitation is that the secondary data from the municipality which the researcher has used might not be reliable as it is subject to the views of the municipality.

### **1.12 Chapter Overview**

- **Chapter One: Introduction and Overview**

This chapter provides a comprehensive background of the water and sanitation department together with the problem statement, purpose statement, research objectives, research questions, significance of the study, and delineation of research and study limitation.

- **Chapter Two: Literature Review**

In this chapter, the researcher reviews the research literature in order to explore other researchers' findings concerning factors affecting financial sustainability of water and sewerage provision, which is the current study that is being undertaken.

- **Chapter Three: Research Methodology and Design**

Chapter three outlines the research design and methods that were used in undertaking the research.

- **Chapter Four: Data Analysis**

In this chapter, the investigator analyses data that was gathered during the research. In this case the qualitative data analysis methods are used.

- **Chapter Five: Findings, Recommendations and Conclusion**

This chapter, discusses the findings, conclusion and recommendations of the study with attention given to the research objectives.

### **1.13 Summary**

The first chapter offers a background to the study. In this chapter you also find problem statement, research questions, research objectives and purpose statement. It also provides the research methodology and discusses design and ethical considerations. This chapter, also outlines how the researcher has gathered data and the method utilised to analyse data as well as implication of the research. The next chapter will deal with the literature review regarding factors affecting financial sustainability of water and sewerage provision in Cape Town.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Chapter 1 offered a short version of problems relating to water and sewerage provision in Cape Town, which has motivated me to embark on this project. It also analysed gaps in the existing body of research which influenced the study's statement of the problem. The objective of this, second, chapter is to define and describe important concepts concerning the research questions and objectives. Furthermore, it summarises what the accredited researchers and theories are saying about the concepts. The main concepts are:

- Sustainability
- Financial sustainability
- Four Financial Sustainability Pillars
- Model of sustainable developmental service delivery in local municipalities
- Benefits of meeting water and sewerage millennium development goal
- Water and sewerage service standards in Cape town
- Factors affecting water and sewerage provision
  - Social Factors
  - Legislative Factors
  - Economic Factors
  - Political Factors
  - Technological Factors

This study has required exploration of existing research and theories that are connecting financial sustainability with water and sewerage provision and what benefits can be achieved in meeting water and sewerage provision service standards. The researcher surveyed books, journals, published articles, and internet sources germane to the aims of this research.

#### **2.2 Defining Sustainability**

The principle of sustainability received extensive worldwide consideration in 1987 after the Brundtland Report was published by the United Nation's World Commission on Environment and Development (Brundtland. 1987). The definition of sustainability has evolved since then.

The initial definition from the Brundtland Report defined sustainability as a situation where the demand placed upon the environment by people and business can be met without destroying the capability of the environment to deliver for future generations.

Heffernon *et al.* (2007a), states that sustainability is concerned with providing for the present generation without compromising the strength of the environment attaining the needs of upcoming generations. Similarly, Savitz and Weber. (2006), described sustainability as a business that can sustain itself indefinitely while also creating profits for its shareholders as well as affording protection to the environment and also enhancing lives of people in society.

Accordingly, for local government to have sustainability, they need to improve financial management capacity of water and sewerage. A municipality should also show that it is able to generate adequate revenue in order to ensure continuation of water and sewerage provision for the future.

In their article on changing paradigms, Hirvilammi and Helne. (2014), alluded to the fact that all human action has a global ecosystem impact that is unpredictable as we live in the Anthropocene era. Hirvilammi and Helne. (2014), argued that in addressing financial sustainability of water and sewerage provision, policies that are environmentally and socially sustainable cannot be achieved incidentally but through a paradigm shift.

Consequently, provision of water and sewerage for future generations would depend on the ability of the present generation to sustain the financial viability of their own water and sewerage provision as well as guaranteeing this for future generations. The provision of water and sewerage is currently facing a number of challenges which, if not successfully and effectively addressed, threatens the financial viability of water and sewerage now, and well into the future. Having defined sustainability, it is therefore important to understand and define what financial sustainability is, according to the research.

### **2.3 Defining Financial Sustainability**

Financial sustainability is defined by the Australian Financial Sustainability Review Board. (2005), as financial performance of the council which can be sustainable as a long-term goal if,

- (i) Council spending and funding policies are prolonged;
- (ii) Development capacity in revenue improvement and improved service and infrastructure cost demand is sustained; and
- (iii) Ordinary financial setbacks and financial hiccups do not result in substantial upsurge in rates or, alternatively, in troublesome service cuts. This definition therefore speaks to the level at which the municipalities or local council in the position of generating their own income and capacity, services its infrastructural operational and maintenance costs.

Conversely, an inquiry by South African Local Government Association. (2005), found no generally accepted definition of financial sustainability in local government in South Africa. SALGA offered a number of financial sustainability definitions in local government in South Africa.

Nevertheless, a generally acceptable definition of financial sustainability that is used in local government is the capability to accomplish and meet financial obligations and spending commitments now and well in to the future. Government services provision for the current generation should not amount to an insurmountable bill that will exact pressure on future generations (SALGA. 2005b).

Based on the vague definition of financial sustainability and because there is no generally recognised definition of this term in South Africa, one can conclude that financial sustainability is a fairly new occurrence within local government in South Africa. In reviewing the literature, therefore, it is crucial to highlight and discuss the elements that will make local government municipalities financially sustainable, starting with the four financial sustainability pillars below as identified by Bath. (2001a).

## **2.4 Four Financial Sustainability Pillars**

Bath. (2001a), found that in order for non-profit organisations such as municipalities to achieve financial sustainability they must strive to fulfil this goal. Financial sustainability will permit organisations such as municipalities to meet administrative costs and to initiate activities in order to accomplish their organisations missions and to avoid limitless negotiations with sponsors and donors, who may not agree with the municipality's vision.

In South Africa, municipalities' financial sustainability remains a serious challenge because of the nonexistence of sound financial management, lack of creativity and commitment and the fact that many of these municipalities continue to depend on national and provisional funding. Bath. (2001), identified four fundamental financial sustainability pillars in non-profit organisations such as municipalities:

- The first pillar is Financial and Strategic Planning which has to do with simplifying organisations' missions and prioritizing actions and objectives to achieve them. Municipalities need to use strategic planning mechanisms, however, if that is not taking into account the resources that are available to implement the preferred strategies, which could result in new demands failing. Municipalities therefore have to establish a plan around its financial position that is scenario based, starting from minimum feasibility studies to ideal situations in water and sewerage service provision. This minimally practicable scenario enumerates significances that are crucial to satisfying the objective within a stipulated time frame, as well as within operational and maintenance budgets of the municipality.
- Income Diversification is the second financial sustainability pillar, focusing on revenue diversification together with other funding mechanisms. Non-profit organisations such as municipalities should not depend on one source of income; they cannot depend on the funding from central and provincial government. Therefore, it is necessary for municipalities to generate enough revenue for them to be able to cover the mounting operational and maintenance costs and to be financially sustainable.

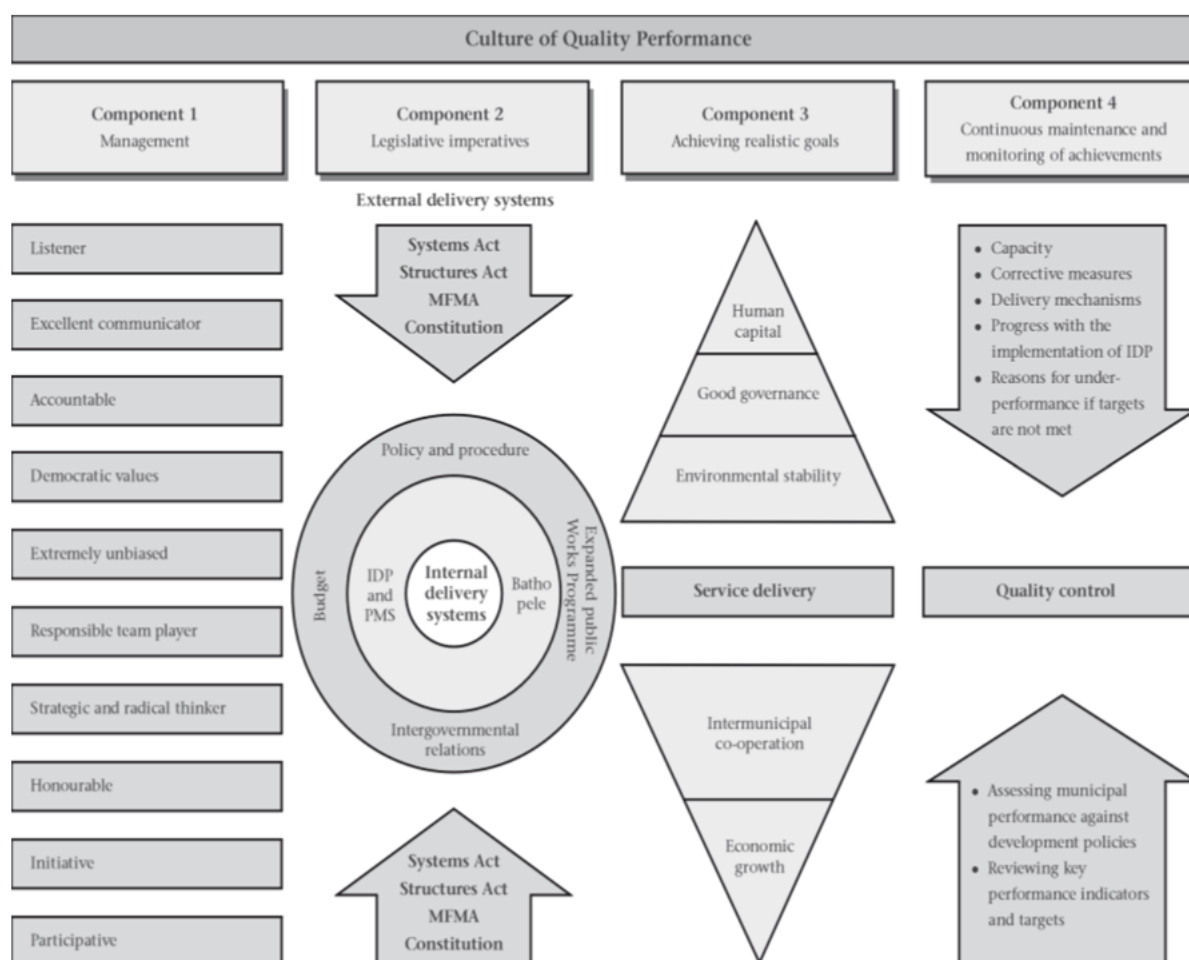
- The third pillar is Sound Administration and Finance. According to this pillar, even though a municipality may generate sufficient revenue, if it cannot manage that revenue there will still be a shortfall in achieving financial sustainability. Municipalities need to develop institutional policies in order to ensure that resources are optimised as well as displaying transparent management of finances, with effective administrative processes and procedures to govern their finances.
- The last financial sustainability pillar is Own Income Generation. This pillar can never be over emphasised in terms of making sure that municipalities operate effectively and efficiently. Capacity needs to be established within the municipality to effectively manage income generation in order to cover operational and maintenance costs in a sustainable manner.

Pretorius and Schurink. 2007, argue that in order for the municipality to attain its objectives there is a requirement to identify shortcomings, problems as well as resolution and progress monitoring consistently. In wanting to achieve sustainable service delivery and financial sustainability, the Retro Advanced Leadership Model below was developed for South African municipalities to adopt (Pretorius and Schurink. 2007).

## **2.5 The Model of Sustainable Service Delivery in Local Municipalities**

Municipalities have the duty to develop in order for the municipality to accomplish executive, budgetary and development practices in order to ensure that the fundamental requirements of the society is prioritized and that its community is developed socially and economically, and to ensure that participation in national and provincial development platforms is improved.

The above objective will be accomplished through the execution of an IDP as well as determining the strategy of the municipality which, together, leverages development capital and related resources (Pretorius and Schurink. 2007). Furthermore, municipalities should vigorously advance public and private sector co-ordination of resources and investment in order to meet developmental objectives and to be financially sustainable. Below is a diagrammatic illustration of how sustainable service delivery may be enhanced in South African municipalities, if adopted.



**Figure 2.1: Retro Advanced Leadership Model**

The Retro Advance Leadership Model, above intended to assist local government to achieve its objectives which includes decent control, human capitals development, steadiness of environment, collaboration of municipalities, expansion of the economy, community involvement and management of programmes. Furthermore, the Retro Advanced Leadership Model (see Figure 1) offers a vital mechanisms for service delivery improvement in municipalities. These include leadership performance management, legal imperatives, realistic goal achievement and endless achievement maintenance and monitoring. With this model in mind we therefore look at meeting the water and sewerage millennium development goals which will benefit municipalities in South Africa,

## 2.6 Benefits of accomplishing Water and Sewerage Millennium Development Goals

According to OECD. (2011), water and sewerage provision produce considerable achievements for human wellbeing, economic development and to the environment as a whole. The report further advised that affording portable water and sewerage lessens well-being threats and also allows time for schooling and other fruitful events which, together with the

labour force, increases productivity. Quality sewerage removal assists in providing good quality surface water with benefits for the environment as well as fiscal segments that depend on water resources like fishing, agriculture and tourism.

Likewise, the World Health Organisation (WHO) has anticipated that almost 10% of the global burden of diseases could be eradicated in emerging nations through provision of water, cleanliness and sanitation interventions. WHO estimated that US \$84 billion per annum in benefits could be generated if water and sanitation development goals were to be met. Amongst the benefits that could be achieved are time gains of three quarters and lessening diseases relating to water (OECD. 2011).

It is estimated that by the year 2050 around 40 percent of the world population will confronted water shortage (Gadgil. 1998; Kuylenstierna et al. 1998; United Nations. 2002; Hamdy et al. 2003). A great amount of time, income and other resources is devoted, by underprivileged people, to safeguarding water in order to acquire their fundamental requirements. If water inadequacy and rivalry for water increases in value and amount, together with location, that would threaten advancements made in eradicating poverty, public health and food production, especially in developing countries like South Africa. This is evident in water scarce countries where poverty perseveres.

Batabyal. (2001) and Tsur *et al.* (2004), argue that economic tools and concepts have the potential to determine optimal methods from among numerous potential methods in order to enhance the quantity and dependability of the supply of water as well as the choices for eradicating water resource deficits. Water allocation may be judged among users from the economic efficiency view point, where allocation of water is part of an investment project series (Cai et al. 2003).

Consequently, CoCT water and sewerage services, within a developing country, needs to build the infrastructure and to ensure that it is maintained and operated adequately, with timeously renewed components for water and sewerage service provision that is affordable, suitable and reliable in nature. Below is a monetary illustrative table of water and sewerage services benefits from meeting the millennium development goals.

**Table 2.1: MDGs overall benefits of Water and Sanitation**

Type of Benefit	Breakdown	Monetized benefits (in USD)
Time savings from improved water and Sanitation services	20 Billion working days a year	USD 63 billion a year
Productivity Savings	320 million productive days gained in the 15-59 age group 272 million school attendance days a year 1.5 billion healthy days for children under 5	USD 9.9 billion a year
Health-care savings		USD 7 billion a year for health agencies USD 340 million for individuals
Value of deaths averted, based on discounted future earnings		USD 3.6 billion a year
<b>Total benefits</b>		<b>USD 84 billion a year</b>

Source: Prüss-Ürstün *et al.* 2008, based on an evaluation by Hutton and Haller. (2004).

## **2.7 Economic Impact of Water and Sewerage Service Provision**

In the past couple of years, water and sewerage provision has been one of the points of focus of the local government in South Africa, with critical alterations progressively happening. The manifestation of these changes in South African municipalities is the introduction of a new oversight national department of Water and Sanitation under Minister Nomvula Mokonyane and the introduction of new technologies to combat challenges facing water and sewerage provision, for example, dry sanitation and desalination of sea water as an alternative to clean water toilet flushing systems.

This new technology system was introduced by Minister Mokonyane to the public in a nationwide campaign by her department on 22 May 2015, with a budget of R16 billion, with more than R800 million going towards water planning and R12.5 billion going towards water infrastructure development in the 2015/ 2016 financial year alone (SABC. 2015).



Provision of clean satisfactory water and sewerage services becomes vitally important in a country's economic development. If inhabitants' access clean water, this improves their health, which in turn provides them the opportunity to channel their energy towards economic undertakings. Most economies in Africa are sustained by agricultural production and activities which, in turn, is sustained by water. Statistics SA. (2016) quoted in the Agriculture Market Intelligence Report. (2017), pointed out that primary agriculture in South Africa contributes about R66.7 billion which was 2% of Gross Domestic Product of South Africa at the conclusion of the second Quarter in 2016.

DAFF. (2013a), cited in the Agriculture Market Intelligence report. (2017), postulates that if the agronomic value chain is accounted entirely, then agriculture sectors' support adds up to 12 % of GDP. Harvey and Taylor. (2000) and Blackden and Wodon. (2006), cited in Robyn Meeks. (2012), raise a very important fact on the link between water and the economy: they assert that the non-existence of water infrastructure increases the amount of time people are involved in home responsibilities which then results in forfeiture of time for income generating responsibilities. Muller *et al.* (2009) also agree with the fact that water is a catalyst to growing the economy and to the advancement of a country.

Muller. (2009), emphasised that the development of an economy is enhanced by how water resources are managed. Effective and efficient management of water reduces poverty (Muller *et al.* 2009). Muller *et al.* 2009, further explains that the key ingredient which is familiar in South Africa is the fact that strategic design needs to balance economic growth with development and social distribution that is acceptable to the society.

## **2.8 Water and Sewerage Service Standards in Cape Town**

According, to South African Constitution Cape Town municipality is Category A municipality which is a Metropolitan area. South African constitution regards a metropole as an urban area with a high population concentration and whose residents are directly or indirectly associated to one another in terms of economic relationships, transport system and recreational patterns.

A metropolitan jurisdiction is an exclusive and singular authority in the area that it governs. A metropolitan area is therefore administered by a singular structure that is resilient and has total responsibility for all communities in the area that it governs. The Water Service Act (Act No. 108 of 1997) compels the municipalities to provide water and sewerage services that are

competent, reasonable, cost-effective and sustainable. Municipalities are also empowered by the National Water Act (Act No. 36 of 1998) which recognises the fact that the eventual objective of managing water resource is to ensure its sustainable usage which is beneficial to all consumers.

There are economic and social benefits to be enjoyed if water provision is managed effectively and efficiently as expressed in the National Water Act. One of the Department's legislative mandates is to guarantee sustainability of water provision through protecting, managing, using, developing, conserving and controlling water usage so as to ensure the continual benefit of all the communities and the environment. Water related requirements entail adhering to policies and legal frameworks as well as necessities relating to the constitution which are crucial in dispensing the imperative access to sufficient food, economic transformation and poverty eradication (South Africa Yearbook. 2015/ 16).

The provision of water and sewerage has become a serious, contentious issue where service delivery is an important element in a changing society. Lack of water and sewerage provision remains a grave challenge at local government level in South Africa, including Cape Town. The violent service delivery based protests that have been observed in municipalities emanates from poor service delivery and are of great concern. These service delivery parades and protests indicate that the level at which service delivery should have been delivered has not been realised.

Booyesen. (2009); Marais *et al.* (2008); Alexander. (2010); Habib. (2010); Marais *et al.* (2008) and Atkinson. (2007) have all alluded to the fact that service delivery protests in underprivileged areas that were largely observed in 2004 are due to poor service delivery. There are a number of reasons for the observed protest actions, with insufficient service delivery at the core of the reasoning. The audit on skills and capacity challenges conducted by Deloitte. (2013), on leadership thoughts and skills and capacity challenges agrees with the above attribution to poor service delivery. The audit further pointed out that the strikes and community unrest most emanated from poor public engagement and community engagement. Increasingly, community government do not caretaker for the aspirations and expectations of the locals that they govern which results in disruptions and destruction as society are not satisfied with the service delivery.

The civil servants are seen as not taking the best interests of the community into account. The community perception drives community actions as, sometimes, perceptions are as good as reality. In terms of major issues facing the Cape Town municipality, the one highlighted issue is water scarcity which is looming in the future. Low rainfall figures and water scarcity in the year 1999/ 2000 resulted in low dam levels which resulted in water restrictions imposed on citizens as an effort to reduce water consumption levels.

### **2.8.1 Profile of Cape Town (Overview – Census 2011)**

Census 2011 regard Cape Town as having 3 740 025 total population in the same year. The amounted to a 29.3 percent growth reported between 2001 and 2011 with the number of households standing at 1 068 572, totalling to a growth of 37.5 percent. Over the period of 10 years the average size of each household dropped from 3.72 to 3.50. Family is defined as a collection of persons living organised and cooperatively providing each other with living essentials or even a person living alone (Statistics SA. 2011).

Residents and family numbers of Cape Town in 2011 is quoted as an official stats. Table 2.2 below illustrates the 10 year population growth of Cape Town between the years 2001 and 2011. Table 2.3 illustrates the demographic by race and gender profile.

**Table 2.2: Cape Town Overview – 2011 Census**

Cape Town	2001	2011	Change 2001 to 2011	
			Number	%
Population	2 892 243	3 740 025	847 782	29.3%
Households	777 389	1 068 572	291 183	37.5%
Average Households size	3.72	3.50		

Source: WSDP, 2013

**Table 2.3: Demographic Profile – Census 2011**

Cape Town Population	Male		Female		Total	
	Num	%	Num	%	Num	%
Black African	722 755	19.3%	722 184	19.3%	1 444 939	38.6%
Coloured	759 559	20.3%	825 727	22.1%	1 585 286	42.4%
Asian	26 155	0.7%	25 631	0.7%	51 786	1.4%
White	280 133	7.5%	305 698	8.2%	585 831	15.7%
Other	42 097	1.1%	30 087	0.8%	72 184	1.9%
Total	1 830 699	48.9%	1 909 327	51.1%	3 740 026	100.0%

Source: WSDP, 2013

Table 2.4 below illustrates the economic profile of Cape Town with the unemployment rate in proportion to the working force. The labour absorption rate is the proportion of the population at the working age of 15 – 64 years of age that is employed and the labour force participation rate is the proportion of the working age population that is either employed or unemployed.

**Table 2.4: Economic Profile – 2011 Census**

<b>Cape Town Labour Force Indicator</b>	<b>Black African</b>	<b>Coloured</b>	<b>Asian</b>	<b>White</b>	<b>Other</b>	<b>Total</b>
<b>Population aged 15 to 64 years</b>	<b>1 024 871</b>	<b>1 078 456</b>	<b>38 443</b>	<b>409 264</b>	<b>53 178</b>	<b>2 604 212</b>
<b>Labour Force</b>	<b>675 037</b>	<b>662 814</b>	<b>23 202</b>	<b>301 202</b>	<b>37 457</b>	<b>1 700 229</b>
Employed	441 911	512 551	21 369	287 029	31 379	1 294 239
Unemployed	233 126	150 263	2 350	14 173	6 078	405 990
<b>Not Economically Active</b>	<b>349 834</b>	<b>415 642</b>	<b>14 724</b>	<b>108 062</b>	<b>15 721</b>	<b>903 983</b>
Discouraged Work-seekers	40 453	37 010	553	2 481	936	81 433
Other not economically active	309 381	378 632	14 171	105 581	14 785	822 550
<b>Rates %</b>						
Unemployment rate	34.54%	22.67%	9.91%	4.71%	16.23%	23.88%
Labour Absorption rate	43.12%	47.53%	55.59%	70.13%	59.01%	49.70%
Labour Force Participation rate	65.87%	61.46%	61.70%	73.44%	70.44%	65.29%

Source: WSDP. 2013

### 2.8.2 Quality of Drinking Water in Cape Town

Potable water quality is controlled and monitored very strictly in terms of SABS 241 1984 by Water Treatment Division in conjunction with other national and international standards. The CoCT Scientific services department conducts weekly visits to each and every Water Treatment plant (WTP) to retrieve various samples. The samples received from WTP get to be analysed and, based on the results, a report is compiled of these and published weekly (WSDP. 2013/2014).

The WSDP. (2013/ 14), demonstrated how well the City of Cape Town, in terms of the Blue drop system measurement, compared to other South African metros around the country. This was done by National Department of Water and Sanitation (DWS) which introduced initiatives to measure the Blue drop. DWS from 2009 dropped the number of assessment categories from 9 to 5. The CoCT Blue Drop score is extremely high at 98.14. The table below illustrates the blue drop score of Cape Town which is an indication of how well Cape Town is doing in comparison with other metros.

**Table 2.5: South African Municipal Blue Drop Score**

YEAR OF ASSESSMENT	Nº OF ASSESSMENT CATEGORIES	BD SCORE %	COMMENT
2009	9	100	One of only 3 municipalities to get 100%
2010	9	98.18	2 <sup>nd</sup> in SA Top 10
2011	8	97.61	2 <sup>nd</sup> in SA Top 10 Platinum Award for 3 successive BD Awards
2012	5	98.14	6 <sup>th</sup> in SA Top 10 Platinum Award for 4 successive BD Awards

Source: WSDP. 2013

DWS introduced a Blue Drop System as part of Drinking Water Quality (DWQ) which is the programme that regulates drinking water quality to assure public confidence. Certification qualification for Blue Drop that the water facility power must total at least 95% to achieve the standards as set by DWS. The certification process is not only concerned with water quality, it also involves ensuring workforce with appropriate expertise, combined to a preparation administration. Measurement of skills levels of staff involve physical audits which are

conducted by the officials from DWS. The physical audit comprise supplementary features, for example, maintenance and monitoring of catchment and storage areas. It also includes physical auditing and monitoring facilities, pipeline, distribution systems and water treatment facilities as well as processes that are being followed by the municipality (WSDP. 2013).

2008/2009 was the year of the inception of Blue Drop certification and Cape Town has since been awarded the certification for Blue Drop. In the Western Cape Province in 2012 Cape Town achieved top notch and there were only ten municipalities in the Western Cape that obtained the Blue Drop status. Cape Town was rated number 6 in the whole of South Africa according to WSDP 2013. Cape Town was awarded Platinum Blue Drop for its steady exceptional routine in 2008 to 2012 which is a period of 4 years and it is still the top performer as the water authority in South Africa.

### **2.8.3 Quality of Waste Water in Cape Town**

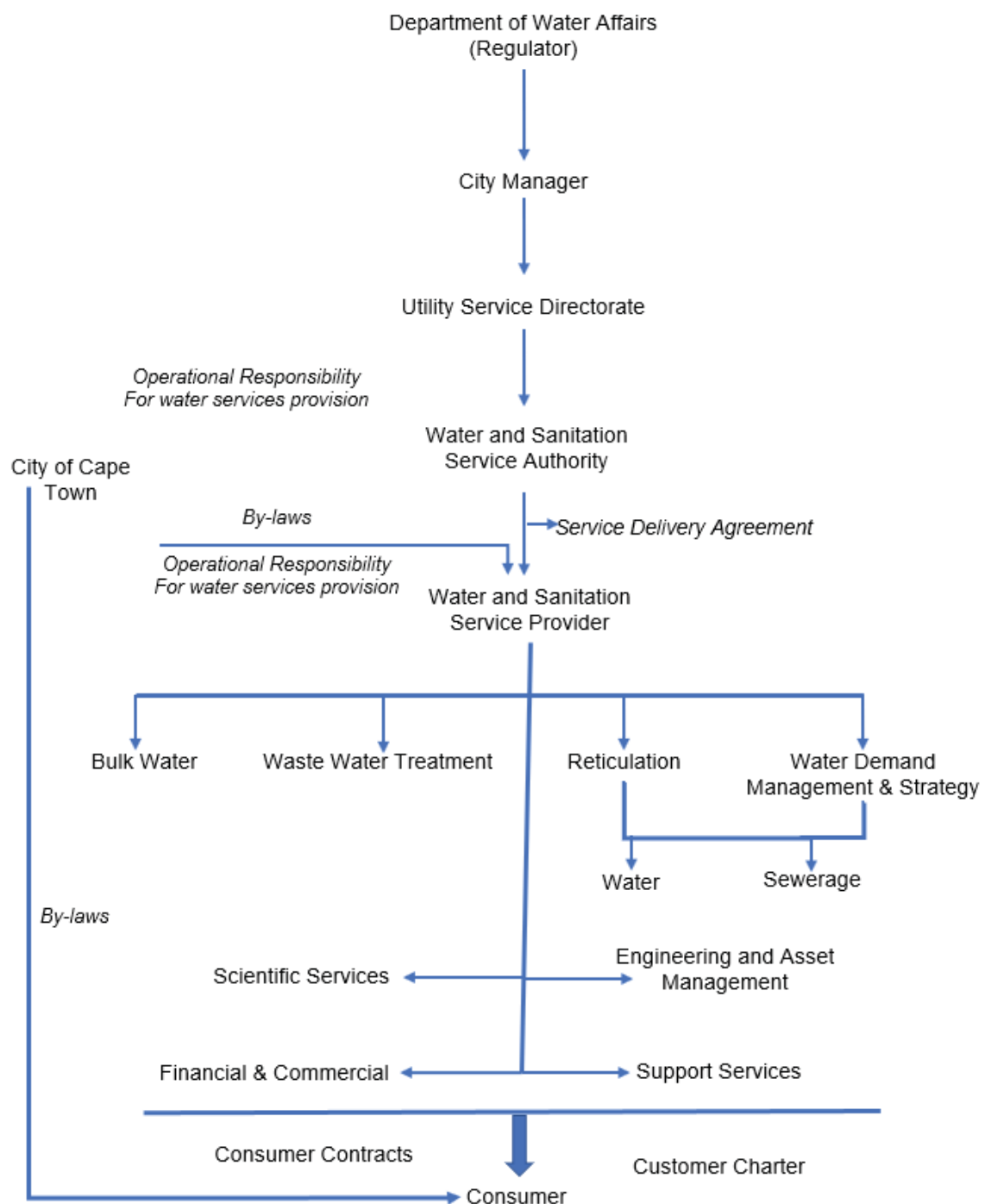
Water and Sanitation department, as the regulator, has introduced waste water quality management and it commands and facilitates a more transparent way to designate the level of self-reliance. The national department of water and sanitation started the method of bestowing towns in the Water Services Authorities within South Africa with a Green Drop status. To accomplish the Green drop status the Water Service Authority (WSA) has to fulfil waste water legislative requirements and other best practice requirement relating to waste water treatment being executed.

In the 2013 report by DWS on Green Drop scoring the average score was 89.23%. The Green Drop measures the quality of the municipal wastewater treatment facilities. A steady increase in the Green drop score of CoCT is noticed since 2011 which was 86.80% up from the 2009 score of 82.00%.

### **2.8.4 Organisational Assessment**

The Cape Town carries both the constitutional mandate for the provision of water services, being a Water Service Authority, together with functioning obligation and as the Water Service

Provider through the Department of Water and Sanitation. Below is a diagrammatic illustration depicting Cape Town Municipality Water and Sanitation Department Structure.



**Figure 2.2: Structure of Water and Sanitation department**



## **2.9 Factors Affecting Financial Sustainability of Water and Sewerage Provision**

In order to achieve financial sustainability it is important to identify and address some of the key financial constraints affecting and impacting on the financial sustainability of water and sewerage provision. These key financial constraints were acknowledged by PwC, in their NFS report, research of community based governance, ordered by the Australian Local Government Association.

They acknowledged the following shared features of municipalities characteristically facing financial sustainability limitations which fairly often include:

- Insignificant revenue growth
- Cumulative non-core involvement delivery due to pressure from community demands, with some municipalities inclined to step outside the provision of non-traditional services
- Cost growth that far exceeds revenue generation. Cost and revenue growth deviation leads to municipalities operating with a shortfall which results in postponing infrastructure renewal expenditure.
- Some municipalities have a tendency or they are inclined to run on operational deficits which results in postponing and underspending on the renewal of infrastructure, especially on community groundwork resulting in an annually recurring crafting backlog.
- Some municipalities lack robust financial and asset management abilities which are crucial to recognising sustainability glitches, resulting in renewal elevation expenditure.

Conferring to a study by Maake and Holtzhausen. (2015), poor planning and intergovernmental relations, indecisive leadership and incorrect service delivery model were some of the limitations facing Mopani District Municipality in Limpopo Province in its water provision. South African municipalities have demonstrated in many ways some of these shared features that characterized municipalities that are facing financial sustainability limitations including the Cape Town municipality.

This has been demonstrated throughout the country where, in many instances, we have observed service delivery protests relating to water and sewerage provision and other services that are a responsibility of the municipalities. Furthermore, below are social, legislative, economic, political and technological factors that have been identified as making the provision of water and sewerage provision financially unsustainable.

### **2.9.1 Social Factors**

Peters. (2012), identified two factors why consumers do not pay for services. The most common reason that is being used by consumers for not paying for services is being poor and are unable to pay for municipal services. Agreeing with this assertion, Booysen. (2001), Botes and Pelser. (2001) and Burger. (2001), have all alluded to the fact that for poor communities to say they are unable to pay because of poverty is common. While there are indications that there is a level of income the community still refused to commit to paying for municipal services. According to McPhail. (1993) affordability verification and the need to incorporate a culture of paying willingly needs to be included at the planning stage of water and sewerage provision, if cost has to be recovered. Incorporating a culture of payment by communities will bring about awareness of potential service usage and the adjustment of tariff charges will be justifiable for maximum cost recovery.

The other factor which is related to the non-payment of service charges observed is paying willingly for services. According to Fjeldstad. (2004a) the non-payment of services does not only reside in relatively poorer areas but there are significant disparities on payments and it occurs across the entire spectrum of the community both in poor and non-poor areas. Booysen. (2001b) concurs with the above assertion, after conducting an analysis on family earnings and disbursement of 1600 homes to ascertain reasons for not paying for services. The findings of the survey was that both extremes of the society, be it higher income households or poor households, the pattern of payment exists. Commonly, as a result of municipalities providing insufficient service delivery, communities boycott paying for services leading to a sequence of non-payment. The mentality and culture of South African society unwilling to pay for services is an old phenomenon influence by apartheid rejection of rates, when ratepayers repudiated to pay for services in objection against unfair policies of the government of the time.

According to Glaser and Hildreth. (1999), the way the government is perceived and the willingness by the society to pay for municipal service charges are directly linked. Fjeldstad. (2004b), agrees that this perception by society towards municipalities is implied by the level of trust that society have towards local government leadership. Johnson. (1999), has alluded to the fact that the non-payment occurrence undoubtedly weakens all structures of government, together affecting the capacity of the government nationally in effecting changes in the local government sphere.

### **2.9.2 Legislative Factors**

The South African Constitution (1996) obligates local government to provide certain core provisions to the communities, such as water and sewerage provision. According to Bekink. (2006), the Municipal Systems Act 32 of 2000 regulates specific obligations and requirements for South African municipalities that has to be adhered to by all municipalities. One of the five specific requirements that municipalities must adhere to is financial sustainability. Bekink. (2006), further argues that the Municipal Systems Act authorises South African local government to charge and recover service costs, charges and tariffs.

The institution of the National Water Act ensures that water as a resource is safeguarded, utilised, enhanced, preserved, administered and organised, considering the following factors:

- (i) Fundamental needs of current and forthcoming generation are met.
- (ii) Access to water resources is equitable distributed,
- (iii) Water is used for public interest and competence and sustainability is promoted,
- (iv) Social and economic development is fast-tracked,
- (v) Increasing demand for water use is provided for (Government Gazette, 1998)

Goldin, (2010) alluded to the fact that water shortfall is a problem that South Africa faces and that the dissemination of water resources across the country is not equitable. Muller *et al.* (2009), contends that South Africa occupies 29<sup>th</sup> position of the driest countries on the water scarcity index, with an estimated 1110 cubic metres per person in 2005. Goldin. (2010), further contends that because of unproductive governance, which affects the capability of institutions to manage water, the people of South Africa are water poor.

Two main legislative frameworks regulate the provision of water in South Africa, namely the National Water Act and the Water Services Act. The Department of Water and Forestry oversees the implementation of these two pieces of legislation. These Acts establish institutions which manages and distributes water. Health Act 63 of 1977 dictates that potable water has to be fluoridated to obtain a 0.7 mg/l concentration for the purpose of reducing dental problems (WSDP. 2001). Fluoridation is seen to be complicated and expensive and it also poses a potentially hazardous undertaking. There is also a further requirement to renew infrastructure before implementing fluoridation.

The undertaking of renewing infrastructure is an expensive exercise on its own, with an estimated price of R10 mil per annum (WSDP. 2001). It is said that Cape Town has a natural concentration of fluoride that is insufficient and therefore fluoridation concentration requires skilled operators to manage it (WSDP. 2001). This means that additional staff are required to be trained in order to develop their skills which requires extra financing. According to WSDP. (2001), the Department of Water Affairs and Forestry imposed another major measure pertaining to water quality which is the new treated effluent standards. According to WSDP. (2001), R1.5 billion is need to upgrade wastewater treatment plants in order for the CoCT water and sanitation department to comply with the standards and to accommodate future growth.

There are also environmental factors that have to be considered by the municipality, for instance the National Environmental Management Act, Water Services Act and all other regulations passed under the Environmental Conservation Act, Occupational Health and Safety Act and Water Act. All of these are legislative requirements and factors that will require the Cape Town municipality to take them into consideration in order for it to fulfil its constitutional mandate and responsibility, at the same time ensuring financial sustainability.

### **2.9.3 Economic Factors**

A common phenomenon facing South African municipalities that has been observed is economic infrastructure that is old (Western Cape Provincial Review and Outlook, 2007). In order to advance economic development in local government there is a great need to invest in infrastructure such as transport, housing, water and electricity, sanitation and refuse removal, roads infrastructure, bridges and storm water drainage systems.

Mavhungu. (2011), in his study on cost recovery identified the following factors affecting financial sustainability of service provision in municipalities,

- Inability to pay for water and sewerage because of poverty and unemployment.
- Lack of motivation processes by the water finance department to build adequate capacity to collect debt.
- Inadequate information regarding payments of services in low income households.
- Unreliable data resulting in non-payment of services
- Unclear indigent policy – consumers lack information about who qualifies to be indigent.
- Lack of information about free basic water and sewerage.
- Revenue administration accountability is not explained as to who should carry it.
- Lack of financial management and financial accounting.

#### **2.9.4 Political Factors**

Public servants are obliged to use municipal finances in order to address and optimise the quality of life of local citizens. This is done through ensuring that the revenue that is generated internally, along with national and provincial transfers, should finance the responsibilities of municipalities to supply basic needs and other public services as advanced by South African Constitution. Elected leaders, instead often have other motives besides benefiting their constituencies. The executive management of the municipality is sometimes affected by local political changes and disputes for control of local offices. This has been demonstrated in the CoCT metropolitan areas during change of political dispensation where the African National Congress (ANC) was in government and the Democratic Alliance (DA) took power. The administration changed and some of the executive managers resigned or were asked to resign and this transition affected service delivery in Cape Town.

Public service provision utilises the industrial organisational theory that when the power of government spending is opposed politically, it then scrutinizes the entry and exit barriers that regulate the quality and quantity of services and rent abstraction. Motta and Moreira. (2009), in an article on political factors and efficiency in Brazilian municipal expenditure, argue that the political factors affecting the cost of service are the population's demographic conditions, the municipality's degree of fragmentation and favouritism in receiving state transfers.

They further argue that the enticement to efficient municipal administration depends on the amount of political competition, the population's interest in contributing to decisions taken and the mayor's profile. They also point out that a better-informed electorate may intensify the demand for efficient government as we have witnessed in the case of the Cape Town electorate where there was a prevalence of service delivery protest. OECD, Economic Survey in South Africa (2013), subsequently identified the following:

- Revenue improvement initiatives not politically supported by Mayors and municipal councils.
- Revenue collection function lacks adequate funding and staff capacity as a result of municipal managers not allocating enough resources.
- Water and sewerage cut-offs not supported by Council as a debt management remedy.
- Revenue management, indigent credit control and customer care policies which are inadequately formulated.
- Loss of income by breadwinners through recession periods in households leading to unaffordability of municipal bills.
- Some communities resist reimbursement for certain types of services because of billing challenges.
- Deteriorating service delivery leading to boycotts of payment for services by the community and unresponsiveness by municipalities to community concerns and perception.
- Sabotage through rivalry politics.
- Inherited non-payment culture by certain communities because of apartheid.
- Debt collection actions not support by community and political authorities.

### **2.9.5 Technological Factors**

The impact of information technology on the South African public is felt daily, because of cumulative demands on government to meet the needs of a changing society. Crous. (2002), avers that technological impacts on the service delivery environment are of particular importance to Stats South Africa, as most of the institution's products are taking on an electronic format, implying that the internet will soon be their mode of service delivery.

## **2.10 Summary**

In this chapter the researcher defined sustainability and financial sustainability and further identified financial pillars of sustainability. The researcher also discussed Cape Town service standards in comparison with the rest of South Africa. The researcher further discussed the factors affecting the financial sustainability of water and sewerage provision in Cape Town. The literature has also revealed gaps which the researcher has used to formulate the problem statement. The following chapter outlines techniques which have been followed in conducting the study.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY AND DESIGN**

#### **3.1 Introduction**

This chapter outlines methods that have been trailed in conducting this study. Having discussed the theoretical aspects of the study in the previous chapter, the researcher now details procedures that ensured a systematic examination of the problem as stipulated. This chapter offers the research design and methodology, which outlines methods engaged in assembling a comprehensive understanding of factors affecting financial sustainability. In this chapter, the research methods used in conducting the study are clarified and rationalization given of why it was appropriate to use these methods. Furthermore, the chosen research design is described, together with population targeted, sampling techniques, collection data method and procedures as well as delineation of the study.

#### **3.2 Research Methodology**

An interpretive research method was implemented for this research. Interpretive research method aims to offer understanding of how a specified occurrence is interpreted and understood (Saunders *et al.*, 2012a). This technique is dissimilar to the exploratory research method which provides an explanation of the experimental phenomenon. Usually phenomena such as factors affecting financial sustainability of water and sewerage provision refers to experiences of factor importance – such as economic recession, or the development of an understanding of the impact of the recession and inflationary costs of services as well as increases in service charges.

The interpretive method is compatible with qualitative research design that has been used to gather qualitative data, using the convenience sampling method with selected respondents within the water and sanitation division of the municipality (Denzin & Lincoln. 2005). This research method was considered to be appropriate for the study because it required a report on factors affecting financial sustainability of water and sewerage provision.

#### **3.3 Qualitative Research Design**

The data collection procedure was both primary and secondary in nature for this study. Data was collected by interviewing the senior officials of the water and sanitation department by means of administered semi structured interviews.



Senior management officials of water and sanitation were afforded an opportunity to respond to questions as their contribution would enhance better understanding of the financial sustainability and challenges facing the water and sanitation department.

The understanding of financial challenges allowed the researcher to ask the appropriate questions about management practices during interviews. Circulating the questionnaire was, at first, considered by the researcher, however that decision was changed due to the fact that the respondents would provide biased answers should they have received the questionnaire prior to the interviews.

### **3.4 Population**

The population from which the data was collected comprised executive management officials within the Water and Sanitation department. The executive management officials include Directors: Water & Sanitation and Finance, Director: Revenue Management and one of the level 3 Managers of the following branches in water and sanitation: Bulk water, Engineering and Asset Management, Finance and Commercial, Reticulation, Scientific Services, Support services, Technical Services, Wastewater Treatment, Water Demand Management and Strategy and Business Partner (water and sanitation). The population also included citizens of the Khayelitsha area.

### **3.5 Sampling**

The study adopted a convenience sampling method. Saunders *et al.* (2012b), concede that because of accessibility and easy availability of selected cases, random convenient sampling is preferable. McMillan & Schumacher. (2006a), acknowledge that convenience sampling is a less rigorous technique, nonetheless it is broadly used in many qualitative studies. Conversely, convenience sample findings are sometimes granted very slight credibility. The sample comprises appropriately selected informants, namely the executive management officials of the water and sanitation department.

**Table 3.1: Total Number Population Sample**

<b>Population</b>	<b>Total Number of Population</b>	<b>Sampled</b>
Water and Sanitation Executive Management	14	14

Source: Beda's Sample 2015

This study utilised semi structured interviews in conducting interview with the selected sample above. The study included observation of the actions and attitudes of the citizens and local business activities in the area of Khayelitsha, within the Cape Town municipality. Khayelitsha was chosen as a site for sampling because of lack of resources, lack of time and the vast area that the project involves.

### **3.6 Data Collection Method and Procedures**

Interviews used by the researcher were semi structured in order to probe the responses from the respondents. Senior management officials were granted an opportunity to respond to questions as their contribution allowed a greater understanding of the financial sustainability and challenges facing the water and sanitation department.

#### **3.6.1 Semi Structured Interviews**

Primary data was collected by means of interviewing senior officials of the water and sanitation department using designed and administered structured interviews. Structured interviews allowed the investigator to enquire deep knowledge by means of unrestricted questions on factors affecting the financial sustainability of water and sewerage provision as a research subject. The researcher took notes, used transcriptions and audio recordings to capture data throughout interviews.

The data collection instrument was open-ended questions through recorded interviews with selected municipal officials. The interview recordings and transcripts will be fundamental data collection material in order to ensure rigorous data generation and analysis (Schwandt. 2007a). According to MacMillan and Schumacher. (2006b), structured interviews enable a greater degree of impartiality and consistency permitting the researcher greater leeway in asking broad questions.

The researcher has had to create understanding of the independent and publicly assembled connotation of the occurrence that is being considered, therefore structured interviews become very significant. Yin. (2003a), argues that collecting data in case study interview becomes an essential method to employ. This is due to the fact that research utilising event research is about social activities that should be described and understood through the judgments of precise candidates and respondents who are well conversant, providing imperative perceptions into the phenomenon (Yin. 2003a).

When conducting interview the researcher should not treat people as subjects of research as they will act as such, and will act differently from the way that they usually do (Bogdan and Biklen. 1998). The researcher had to ensure that participants behaved no differently from the way they would on a normal day in interacting with them. The participants comprised senior management in the water and sanitation department and it was important for the researcher to indulge them as such.

### **3.6.2 Collection of Observation Data**

According to Saunders. (2009), primary observations involve the researcher writing down what is said at a particular time. In this study, the researcher was a primary observer since he was present when the action happened. The researcher kept a journal of what was happening. The researcher noted and recorded discussions that would have happened on a particular day so as not to forget.

Designed and Administered semi-structured questionnaires were used for the interviews to gather primary data needed to achieve the aims of the research from the Water and Sanitation department's executive management. The interviews were recorded and later transcribed. For secondary data, the researcher used documentary survey as a data collection technique. For the purposes of this research, information was gleaned from the department's official documentary sources:

- Department's Annual Reports
- City of Cape Town Integrated Development Plan (IDP)
- Water Services Development Plan (WSDP)
- Department's website

### **3.6.3 General and Meeting Observations**

This was informed by means of random visits to different areas and selective meeting observation in order to determine standard usage and willingness of citizens to pay for water and sewerage. This includes determining the unaccounted for water usage in residential, industrial and informal trading applications.

Yin. (2010), defines observation as an essential way of determining attitudes of citizens about a phenomenon without being noticed by those being interviewed. Yin. (2010), further argues that this is an essential tool for qualitative research, however it is also noted that the observer should not be noticeable in order to achieve better cooperation. The researcher had an opportunity of attending staff meetings where service provision was discussed since he was also an employee of the water department at the time of doing the research,

### **3.7 Data Analysis and Interpretation**

The section below presents an account of how research data was analysed as well as the reason for choosing the methods used to analyse the data.

#### **3.7.1 Data Analysis and Interpretation**

Narrative methods of analysis were used to analyse data. In a narrative inquiry it is crucial to enrich potential understanding and to aid analysis in order to preserve the sequence of events as described by the narrator and allowing chronological connections (Schwandt. 2007b). Schwandt. (2007b), further argues that either deductive or inductive perspective could be used in analysing qualitative data. Qualitative data collection and analysis are interrelated and interactive in nature and have to be recognised as such. Furthermore, qualitative research is complex, as it is likely to be ambiguous, elastic and complex as it depends on social interpretation compared to quantitative data.

Consequently, unlike with quantitative data, where meanings are derived from numbers, with qualitative data, meanings are principally derived from words. It is therefore important to take greater care in analysing qualitative data because words could have multiple meanings together with unclear meanings, hence greater care has to be taken in clarifying the words (Lee. 1993). Saunders. (2009, acknowledges that collection of data could be done simultaneously with data analyses activity by the participant observer.

#### **3.7.2 Content Analysis**

With content analysis, written data is grouped into categories with identical interpretations (Moretti *et al.* 2011, cited in Cho and Lee. 2014). Content analysis involves studying the content of the text with regard to its meanings, themes and aims (Prasad. 2008).

Nachmias and Nachmias. (1976), cited in Prasad. (2008), determine that assumptions and opinions about the content are normally derived from the content of the message itself. Content analysis is seen as a method of observation since the researcher does not ask for responses from the people but derives it from what they would have communicated already (Kerlinger. 1973 cited in Prasad. 2008).

### **3.7.2.1      *Reasons for choosing content analysis***

Qualitative content analysis provides flexibility in data analysis since a researcher can choose to either use an inductive or a deductive approach. The two approaches may be used in combination. Also, a researcher is able to draw out hidden meaning when using content analysis (Cho and Lee. 2014). Prasad. (2008) describes content analysis as an introverted and a non-reactive research method:

*“It is context-sensitive and consequently can process figurative connotations of data. Nonetheless mostly understood as a quantitative method, it can successfully capture qualitative content as well”*

(Stempel 1989:121, cited in Prasad. 2008).

### **3.7.2.2      *Deductive content analysis***

According to Elo & Kyngäs. (2008) a researcher may use an inductive approach when s/ he has limited background knowledge of the case under study. According to Elo and Kyngas. (2007), the researcher draws concepts directly drawn from the data when using inductive analysis, whereas in the deductive one, they derive them from the existing literature.

According to Catanzaro. (1988), cited in Elo and Kyngas. (2007), a researcher uses the deductive approach if the motive is to re-examine existing facts in new environments. A researcher may use the deductive approach when s/he has prior knowledge about the case being studied and when the aim is to test existing assumptions (Kynga" s and Vanhanen. 1999 cited in Elo and Kyngas. 2007).

Since there have been quite a number of studies regarding the same theme currently under study, the researcher had prior knowledge about existing facts. The deductive content analysis was, therefore, utilised as there was a need to find if existing facts about service delivery in other municipalities also apply to the Cape Town municipality.

### **3.7.2.3      *Challenges for using content analysis***

A great deal of flexibility exists when one is using content analysis as there are no specific procedures for data analysis. The results of each different approach depends on the skill of the researcher who is conducting the investigation (Hoskins & Mariano, 2004 cited in Elo and Kyngas. 2007). Lack of guidelines are a challenge for researchers since there is no right way of doing it. Content analysis has the challenge of being very flexible and there is no one way of doing it. Elo and Kyngas. (2007), have alluded to the fact that it is up to researchers to determine the level of contrasts relevant to the specific problems being investigated.

## **3.8          Ethical Consideration**

In undertaking this study, the following ethical measures were observed: obtaining permission from the municipality and informants to conduct face to face interviews. Ethical principles of respect, beneficence and justice were upheld. Information about the municipality and from the informants were treated with absolute concealment and were only used for the determination of the study. Anonymity and confidentiality of the informants was guaranteed. The researcher respected the dignity and autonomy of the municipality and informants. Once the proposal was approved the process of requesting access to the secondary documentation and permission to interview informants commenced.

A letter was written to the director of Water and Sanitation requesting access in order to conduct the study and to obtain secondary documents, which was granted. The desire to participate in a research study depends upon informants' willingness to share their experience (Yin. 2003b). Since this is a qualitative study which is commonly conducted in surroundings that involve the people participating in their everyday activities and environment, a request to conduct interviews was necessary. This required the researcher to be aware of ethical issues that could be derived from such interaction.

## **3.9          Significance of the research**

This research will be significant as it will provide the latest and best practice knowledge about the factors affecting financial sustainability and guaranteed provision of water and sewerage services. Moreover, this study provides municipalities' with information that may be used to establish better credit control, debt management and financial management tools that will ensure continuous provision of water and sewerage services.

This study comes at a time when we observe high levels of service delivery protests. This study will provide municipal policy-makers an understanding of the extent of municipal financial sustainability in providing water and sewerage.

### **3.10 Delineation of research**

The research is limited to the municipality of the City of Cape Town, water and sanitation department, in the Western Cape.

### **3.11 Limitations**

- This research focussed on the CoCT municipality and is also limited to the water and sanitation department. Findings are not representative of other business sectors. The study targeted executive management officials of the Water and Sanitation department. This study includes random observations in meetings and citizen's attitudes towards water and sewerage provision.
- The rationale for choosing the municipality of Cape Town is travel cost and accessibility.
- The other limitations are that the secondary data from the municipality that the researcher used might be less reliable as it is subject to the views of the City of Cape Town municipality.
- Unwillingness by City of Cape Town, water and sanitation department officials to provide interviews

### **3.12 Summary**

This chapter outlined choices made on research methods suitable and data collection procedures that were employed to elucidate the picture of City of Cape Town, Water Services department. Qualitative research methods were preferred for the study, since the research had to identify factors affecting financial sustainability of water and sewerage provision in Cape Town. After identifying the target population, convenient sampling techniques were used in selecting senior management in the water services department including the finance director and revenue department. Unstructured interviews were used to gather qualitative data from water services department senior officials as well as the finance director and revenue department.

This study includes random citizens and informal business attitudes towards water and sewerage provision. The next chapter provides the analysis of data as well as the presentation of the results.



## CHAPTER FOUR

### DATA ANALYSIS AND PRESENTATION OF RESULTS

#### 4.1 Introduction

The previous chapter dealt with research design and methodology, which outlined methods utilised in assembling comprehensive information about factors affecting financial sustainability. In this chapter data gleaned from interviews and observations is analysed. The key issue in interviews and observations was to determine factors that affect the financial sustainability of water and sewerage provision in Cape Town.

#### 4.2 Water and Sanitation Executive Management Sample Profile

There are 14 Executive management officials in the water and sanitation department who were selected as respondents for this study and an interview request letter was sent to each official to request the date specified on the letter for an interview. This request letter for an interview was followed up by numerous telephone calls to each respondent to ascertain the availability of the respondent in order for the interview to be conducted. Below is a profile of respondents as per the sampled population,

**Table 4.1: Water and Sanitation Executive Management Officials Profile of Respondents**

Population	Sample Total Number	Respondents Total Number	Respondents Percentage
Water and Sanitation Executive officials	14	8	57%

Source: Beda's Respondents profile. 2015

As previously explained the sample consisted of 14 executive management official of Water and Sanitation and because of the non-availability and tight schedule of some of the respondents, out of the 14 official, 8 were interviewed for the purposes of this study. The interviews one-on-one with all the senior managers of the Water and Sanitation department responsible for the following branches within water and sanitation department: Bulk Water, Wastewater Treatment, Water Demand Management and Strategy, Reticulation, Engineering and Asset Management, Finance and Commercial, Scientific Services, Support Services and Technical Services.

The processes of interviewing was semi structured and all 8 respondents were asked the same questions and given an opportunity to respond to each question. Below is an example of interview questions and responses from one of the respondents.

### **4.3 Example of Interview Questions and Responses from One of the Respondents**

#### **Respondent 1 Head of Capital and Operation Budget**

##### *Question 1*

*Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.*

##### **Respondent 1 response to question 1**

Yes I agree, an organisation should always display positive outcomes when it comes to its finances. As the municipality we are not making enough revenue that can lead to financial difficulty, future generation depends on how well we manage the water resources. With financial shortfalls that can lead to us compromising for future provision.

##### *Question 2*

*In your explanation what do you think are the most important financial sustainability factors?*

##### **Respondent 1 response to question 2**

Water and sanitation collect enough revenue to avoid financial shortfalls and it should preserve water for future generation because water is not replaceable. There is no other commodity to replace water. Water is life.

### *Question 3*

*What are the factors to lead to water and sewerage financial unsustainability situation?*

Respondent 1 response to question 3

The first issue that we have as challenge is consumers that are not paying for the service this lead to the city not collecting enough revenue to continue to expand water infrastructure. Even those that are able to pay they don't want to pay. People would rather pay for Dstv instead of paying for water. The department is under pressure to provide water to all citizens but our society does not appreciate the service instead they refused to pay. This lead to financial shortages and not enough recovering of cost at the end of financial year. This happen quite often resulting in the city of Cape Town putting other measures to ensure cost recovery. This includes debt management process where water is restricted to citizen. The other factor is that the water funding is not enough from provincial and national government. The money we get from the two sphere of government is inadequate as to compare to the demands of the citizens. Water and sanitation is key in our societies hence it is important to fund them adequately. Otherwise the society resort to violence protest etc. There should be a way averting these unnecessary protest that in most of the cases lead to destruction of property and protest vandalising city property.

### *Question 4*

*Explain the perceived effect each identified factors?*

Respondent 1 response to question 4

Well the fact that there are citizens that still struggle to get water is not a good image to our department. Other people are still getting water through communal taps, it is not good. Citizens think that we cater for certain sectors only, because of lack of funding and old infrastructure. The lack of infrastructure improvement lead to perception of poor service delivery leading to service delivery parades. The main issue is lack of funding and not enough money to improve infrastructure.

### *Question 5*

*What should be done to minimise the perceived effect of identified factors?*

Respondent 1 response to question 5

Provide water to all. Improve infrastructure, we have a very old infrastructure it needs to be improve to cater for all. Our communities needs to be taught to preserve water, report leaks at home and even if you find a leak of the road, report it to your nearest council office or you can even use our toll-free number to report.

### *Question 6*

*What should be done to improve financial sustainability of water and sewerage provision in the City?*

Respondent 1 response to question 6

Water department needs to be stricter in enforcing water by-laws to ensure enough revenue is generated. Improve communication with all citizens through our community outreach programmes. The water demand management and strategy branch should have community outreach programmes to all citizens. Water leaks must be minimised in every corner of Cape Town.

### *Question 7*

*What is needed to manage identified factors?*

Respondent 1 response to question 7

Well there is no company that does not experience problems. Even well-established top companies sometimes go through difficulties. We should continue engaging each other to improve water provision. Involve many stakeholders as possible. Come up with initiative to improve our service. Most importantly engage community leaders to contribute of all our initiatives. Avowing repeating steps every financial year, you also know that every financial year we are faced with similar issues when it comes to cost recoveries. That should be avoided, we should manage cost recovery efforts. We also need to simplify procurement processes.

### *Question 8*

*What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?*

Respondent 1 response to question 8

Debt management processes for revenue generation. Establishment of water demand management department and strategy.

### *Question 9*

*What are the obstacles for promoting these improvements?*

Respondent 1 response to question 9

Lack of cooperation and not enough engagement in community that we serve. People should understand our city operates, we must teach community about water by laws. Our people do not understand some of these things, how they work and how important is the issue of water.

### *Question 10*

*What management framework can be developed to support financial sustainability?*

Respondent 1 response to question 10

We have our management which I think is doing all what it can to manage water and sewerage, but still more needs to be done. If you compare city performance with the rest of the country we are doing well. We should continue in this way but as I say more need to be done. Other managers will tell you more but it is good that you are investigating. You are one of us and you are still young. Very work that you are doing it is going to take us forward.

*Question 11*

*Which other ways can be used to improve revenue generation?*

Respondent 1 response to question 11

Government must provide enough funding, debt management improvement initiative. Staff must be familiar with debt management, we need to support them all times. Engage councillors in sub council meetings etc. non-payments or service must be discouraged citizens should be encouraged to pay not only pay for Dstv. Yes

*Question 12*

*Explain sources of water and sewerage funding?*

Respondent 1 response to question 12

Own revenue management, national and provincial funding that's it. If there more I would not be sure, maybe loan what do you call it, I know there is other term it slip my mind.

*Question 13*

*Do you think the current funding formula is adequate? Please explain*

Respondent 1 response to question 13

No no not at all, we run out of capital budget all time, you know that. Like I said our funding should be improved. Money coming from national and provincial government is not adequate, it needs to be improved. We should be getting enough grants to develop infrastructure.

*Question 14*

*Can the financial sustainability of water and sewerage provision be achieved: Please explain?*

Respondent 1 response to question 14

Only if we work together with national government and enough revenue is generated. Financial sustainability is difficult term I'm not understanding it but if it means to get enough money to provide for service be it. We need to work together with our community. Yes I think it can be possible.

#### 4.4 Presentation and Interpretation of Results

Below is presentation of gathered data from eight respondents of water and sanitation executive management team.

##### Question 1

*Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.*

Most of the respondents agree that the provision and maintenance of water and sewage services is vital for the sustainability of future generations. Respondent 3 emphasized the need for better planning so as to ensure the continual provision of these services in the future. With South Africa regarded as a water scarce country, it becomes a necessity that water provision be managed effectively. Respondent 4 stressed that it is a constitutional obligation for the local government to provide water and sewerage services to its people. Respondent 6 emphasised the need to conserve water effectively so as to ensure less leakages and pipe bursts. Some of the respondents struggled to conceptualise what financial sustainability really meant which pointed to the fact that some municipal officials have limited knowledge about this terminology. This was demonstrated by the fact that respondents struggled to understand this question and the researcher had to rephrase this particular question for them in order to be able to understand which eventually made them understand what was being asked and they responded accordingly.

##### Question 2

*In your explanation what do you think are the most important financial sustainability factors?*

Respondent 1 mentioned that sufficient revenue needs be collected in order to avoid shortfalls. Respondents 2 and 5 mentioned good measurement of cost recovery and financial planning as a factor affecting financial sustainability. Respondent 2 emphasised the need for activity costing so as to have a better understanding when estimating the budget for the following financial year. Respondent 4 mentioned that the municipality has to abide by legislation so as to avoid problems like fines. The municipality has to establish a budget as well as conforming to it so as to avoid running shortfalls. The municipality must continuously improve its water



and sewerage infrastructure too. Water conservation is important if the municipality is to be sustainable, according to one of the respondents.

### Question 3

*What are the factors causing water and sewerage financial unsustainability situation?*

Non-payment by the consumers of the service was mentioned as a major challenge. The resultant situation is that the city may not have enough revenue to continue expanding water infrastructure. Respondents mentioned less support from the national government as a challenge that the municipality is facing in its water and sewerage provision. Respondent 2 mentioned informal settlements as a major challenge that needs to be addressed. The respondent emphasised the need for informal settlements funding alone as there is not enough resources to finance them. The national government has to increase its budget for informal settlements. Another challenge is the vandalism of water infrastructure, particularly in the informal settlements area which then put a further strain on the budget. Respondent 3 mentioned revenue collection as key to the sustainability of water and sewerage provision. The respondent also emphasised the need to manage available financial resources effectively. Negative attitudes and the culture of non-payment when it comes to paying rates was mentioned as a challenge by the respondents. Also, lack of planning on tariff prices has led to a shortfall in the municipality budget.

### Question 4

*Explain the perceived effect of each identified factors?*

Respondents mentioned that citizens are struggling to get water as a result of unsustainability of its services. Lack of adequate funding has also led to poor infrastructure. Poor service delivery, particularly in the area of water and sewerage has generated trust deficiency among citizens in the high density suburbs as they perceive the municipality as preferring affluent suburbs to them. Poor service delivery has affected the image of the municipality as citizens perceive it to be lacking capacity and will. Respondents reported that lack of service due to budgetary constraints has led to service delivery protests. Due to demand exceeding supply, this has led to water restriction which affects citizens negatively. Lack of adequate funding has led to the collapse of infrastructure due to old infrastructure not being replaced.

## Question 5

*What should be done to minimise the perceived effect of identified factors?*

The majority of respondents alluded to the fact that infrastructure has to be improved, and communities educated on water preservation. One respondent mentioned that informal settlements must be funded alone. Also, there is a need to improve the general economy so that citizen will be capacitated and would therefore be able to pay the rates. The department needs to be stricter in enforcing water by-laws to ensure that enough revenue is generated. There is also a need to enhance communication with all citizens through the department's community outreach programmes. Respondents emphasised the need to have a reporting mechanism where water leaks are reported. One respondent mentioned recruiting councillors to be the department's ambassadors in the communities, educating the citizens on water and sewerage issues. Majority of the respondents stressed that funding of services needs to be improved.

## Question 7

*What is needed to manage identified factors?*

The municipality must engage with stakeholders which include communities in order to improve water and sewerage services in the city. Respondents also emphasised the need to improve cost recovery efforts as well as simple procurement processes. Respondents also stressed the need to provide proper housing to informal settlements. Rules of payment have to be toughened so as to force rates payment by citizens unwilling to pay. Other respondents mentioned the need to stick to by-laws in order to avoid problems.

## Question 8

*What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?*

The respondents pointed to the establishment of the debt management section and water demand management and strategy as some of the initiatives that were put in place to manage water and sewerage risk. The Department has also spearheaded community engagements so as to improve communication with the community. Financial and resources mismanagement has

to be discouraged. The department is also in the process of rehabilitating infrastructure in order to ensure that it copes with the rising demand for water and sewerage services.

#### Question 9

*What are the obstacles for promoting these improvements?*

Respondents pointed to lack of cooperation and not enough engagement in communities that the department serves. Lack of understanding on how the department works might be linked to the lack of cooperation by the community. Other obstacles pointed out by respondents include lack of funding, poor revenue collection and little or no upfront payment for services. Poor residents cannot pay for the services. Another obstacle is the procurement process that takes forever to complete which results in lost time. The procurement process has to be simplified and it needs to be more flexible during emergency situation. Another setback relates to political interference from councillors. Councillors have a habit of promising free services in order to gain votes and this compromises the city's initiatives necessary to recover costs for operations and maintenance of infrastructure. Respondents also pinpointed the lack of support from senior management, lack of support by councillors and illegal connections as some of the challenges that the department is facing.

#### Question 10

*What management framework can be developed to support financial sustainability?*

One of the management framework variables is training. Respondents pointed out that in managing finance there should be workshops to train and explain the importance of the term and its meaning. Another variable is the involvement of top management in sustainability initiatives. Managers should be ambassadors of change and should understand how finance works. Retention and development of financial personnel is also important when constructing a management framework. The majority of the respondents stressed that staff should be trained in all aspects of finance relating to municipal finance and procurement processes. Management must follow procedures when promoting deserving employees so as to avoid perceptions and allegations of favouritism and nepotism.

#### Question 11

*Which other ways can be used to improve revenue generation?*

Respondents stressed the need for the government to increase funding to municipalities and debt management improvement initiatives. Respondents encouraged the department to peg tariffs to the level of expenditure so as to be able to recover, at least, operational and maintenance costs. One respondent encouraged the provincial and national governments to increase its funding for informal settlements as the city does not collect revenue from those areas. Citizens should be encouraged to pay for the services they receive or enjoy.

#### Question 12

*Explain sources of water and sewerage funding?*

Respondents alluded to the fact that the municipality gets its funding for water and sewerage provision mainly from its own revenue generation projects. Secondly the national government and provincial government also fund the municipality through grants. The municipality also get its funding from private entities through loans mainly for capital projects in order to enhance infrastructure.

#### Question 13

*Do you think the current funding formula is adequate? Please explain*

The majority of respondents stressed the fact that funding is not adequate for water and sewerage provision. National and provincial governments have to increase funding so as to improve the services as well as infrastructure. Community unrest which includes service delivery protests are likely to continue, due to poor service delivery caused by poor funding from the local government.

#### Question 14

*Can the financial sustainability of water and sewerage provision be achieved: Please explain?*

According to the majority of the respondents, conditions for financial sustainability are that the municipality must work together with the national government as well as the communities in

the provision of water and sewerage. One respondent pointed to the need for implementation of the laid down plans as the key to financial sustainability. The issue of informal settlements must be addressed since most dwellers of those places do not pay for the services. Factors, challenges and initiatives that the researcher gathered from interviews are going to be presented in this section.

#### **4.4.1 Factors Affecting Financial Sustainability**

From the interviews conducted, interviewees mentioned the following factors that are having an impact on financial unsustainability of water and sanitation department: ability to pay, unemployment, auditing, budgeting, economy, payments of rates and taxes, internal processes, culture, employees' development, funding and resources like cars, equipment and instruments.

#### **4.4.2 Challenges Affecting Financial Sustainability**

One of the challenges that the interviewees mentioned is that the residents do not understand why they should pay rates as they believe that these kinds of services must be offered for free. Another challenge is the culture of not paying rates. In South Africa, the behaviour of not paying for basic services has developed into a culture which is ingrained particularly in low-income households.

Another challenge is the high rate of unemployment. As the unemployment rate soars, the majority of residents find themselves struggling to fend for food, let alone paying for basic services such as water and sewerage provision. On the part of the Department, one of the major challenges is the lack of a financial model which addresses the issues it is facing currently. Also, there is a need for additional funding in order support workforce needs as the resources they had were not coping. Also, the Department was financially constrained, such that it ran short of strategic equipment such as cars, instruments and equipment.

#### **4.4.3 Initiatives Undertaken to Address the Challenges**

There are various initiatives which are being undertaken by the CoCT Water and Sanitation department in order to address the issue of financial unsustainability. The initiatives being undertaken by the management include improving revenue collection. This is confirmed by the Department's Annual Report (2016/ 2017) which shows that revenue collection stands at 80%. There was an improvement in revenue collection of 3.82 % from the year 2015/ 2016 to 2016/

2017 (Annual Report, 2016/ 2017). The interviewees also indicated that the Department is re-looking at its internal processes in order to improve how people and industries bring in money. One of the interviewees suggested that the Department must craft a sustainable financial model which is comparable to other municipalities' models in other countries, for example New York. This is done for benchmark purposes. Interviewees suggested that municipalities need support from the provincial government as their resources cannot adequately address the needs.

#### **4.4.4 Observations: Community Interactions**

Below is a presentation of factors and initiatives that the researcher gathered from community observations.

##### **4.4.4.1 Factors**

Through interactions with the community of Khayelitsha, the researcher identified various factors which define the willingness and ability of residents to pay for the services. The department's financial sustainability partially depends on the revenue it collects from the residents. One of the factors is information availability. Residents indicated that there is lack or no information on whom to contact if they need help, therefore, they end up not getting the information they need most. Also, most residents said that they were not able to pay for the services as they were either unemployed or earned less. Most residents pointed to dilapidated facilities such as faulty metres and taps as having an effect on financial sustainability of water and sewerage provision. Residents lamented the fact that engagement and accessibility of other related services was at a record low.

##### **4.4.4.2 Challenges**

On the part of residents, lack of information as to who to contact when faced with water or sewerage related problems is one of the challenges that residents in Cape Town face. Residents added that there is no call centre awareness and if one happens to call, he or she waits forever before the call is responded to. Residents also indicated that there is a lack of knowledge and no accessible walk in centres as they are not publicly known. Lack of knowledge about sub council offices and trust in area councillors addressing the plight of the community was mentioned as another challenge. Residents living in informal settlement and surrounding areas feel that they are being created as secondary citizens. Residents also complained that information provided by local councillors was misleading and therefore they would not pay for

water since there were no meter reading rounds and water accounts. Residents also complained that bills were not affordable since they were either earning less or unemployed.

#### **4.4.5 Observations: Normal Daily Tasks and Staff Meetings**

Below is a presentation of factors and challenges that the researcher gathered from observations in staff meetings and when doing normal daily tasks.

##### **4.4.5.1 Factors**

As the researcher was an employee of the Department at the time of doing the research, he had the opportunity of attending staff meetings where issues relating to service delivery were discussed. Through observations during meetings and when performing normal daily activities, the researcher identified the following factors as affecting the financial sustainability of the Department:

- procurement processes,
- basic knowledge about the Financial Municipal Management Act
- training and development
- time management
- implementation
- private contractors' workmanship
- monitoring and evaluation and standard procurement and systematic process

##### **4.4.5.2 Challenges**

One of the challenges facing the department is long and frustrating procurement processes leading to slow service delivery. Top management lacks knowledge about the Financial Municipal Management Act which is a necessary requirement in managing the finances of municipalities. The researcher also noted that too much time was spent in meetings which hampered service delivery. The crucial stage of planning is implementation. The department is facing a challenge of lack of implementation and action orientated focus. Poor workmanship by private contractors affects the provision of services. There is also a lack of monitoring and evaluation with regards to poor workmanship by private contractors. Another challenge is lack of standardised procurement and systematic processes which include requisitions, reservations and requests for quotation.

There is significant loss of income through illegal car wash bays as they do not account for the water they use. It has been difficult for the department to collect revenue effectively since there is a systematic and protesting attitude towards paying for water by both informal traders and formal traders. Unattended leaks and sewerage blockages that are not attended to in time inside and outside properties or residences translate to loss of revenue for the department. There is an unwillingness and reluctance to pay for water usage by general citizenry both in formal and informal areas as they believe that the supply of water should be a free basic services.

#### **4.4.6 Challenges and Strategies: Department Records**

Below is a presentation of challenges and strategies the researcher gathered from thorough document analysis.

According to the WCWDM Strategy (2015/2016), the department faces critical challenges which need focus and these are: *‘financial viability challenges; ratio of collection and willingness to pay for services; metering and billing; ensuring full cost recovery and acceptability of the tariffs by the consumers; reduction in unaccounted for water; high financial requirements; high cost of doing business, and high debt due to non-payment.’* Challenges relating to customer satisfaction are; *“meeting Service Charter standards; improved provision in accordance with the City’s own set desired target levels of basic services to informal settlements and backyards; availability of services for infrastructure expansion; appropriate service standards and level of service; providing a targeted improved level of service, and provision of affordable service”* (WCWDM Strategy. 2015/2016).

#### **4.4.7 Strategies**

Below are initiatives which the Department of Water and Sewerage Provision in Cape Town is undertaking in order to enhance financial sustainability of water and sewerage provision:

##### **4.4.7.1 Creation of jobs**

According to its Annual Report. (2016-2017), the Department surpassed its job creation target by 17% when it created 5971 job opportunities against a target of 5100. Most researchers connect struggling municipalities to non-payment of services by consumers. The job opportunities created by the department will go a long way in empowering communities which will then enhance their payment capability for the services that the department is providing.



#### **4.4.7.2      *Development of employees.***

The department exceeded its targets. The Department, in its Annual report (2016/ 2017) admits that to reach an optimal level of staff is difficult when only using the available resources due to the prevailing economic conditions.

#### **4.4.7.3      *Equipment***

The report says that a total of 24 433 water meters have been replaced against a target of 22000. Also, a total of 24 866 sewerage meters have also been replaced against a total of 11450 (Annual report. 2016/ 2017). This shows that the department is doing all it can to address the issue of dilapidated equipment.

#### **4.4.7.4      *Customer service***

The Department created a new website where stakeholders would find useful information regarding water services. In order to provide flexibility and ease of process involved in service provision, development and implementation of an electronic portal whereby customers may capture their own meter reading. This has been introduced as part of a meter-reading campaign initiative which the water and sanitation department initiated whereby rate payers are required to SMS or send their reading thorough the e-portal (Annual Report. 2016/ 2017).

#### **4.4.7.5      *Adherence to legislations***

Adherence to legislation is important for municipalities since it reduces the vulnerability to fines and penalties. This reduces financial constraints which, in turn, increases financial sustainability. The Department's Annual Report, (2016/ 2017) shows that it has been adhering to legislation as evidenced by the ISO certification which was awarded to many branches which fall under Department. These branches include the Finance and Commercial Branch and Support Services.

#### **4.4.7.6      *Financial Support***

The interviewees emphasised the need for the local government to help departments since their resources are not adequate. Furthermore, the CoCT and The Nature Conservancy, an international conservation organization, have agreed to set up a water fund which aims to safeguard water supplies and biodiversity while supporting local livelihoods (Annual report. 2016/ 2017). The Department initiated a project whereby the Brakkof Reservoir, which

supplies the city with water, was to be repaired. The main aim was to prevent water loss, natural disasters, vandalism and contamination which have the effects of increasing costs if not addressed. Other reservoirs were to be repaired for the same purpose as well.

#### **4.4.7.7 Revenue collections**

Water and sewerage collection improved by 3.82 % from the year 2015/ 2016 to 2016/ 2017. Although water and sewerage collection stands at 80 %, the improvement from the previous year to the current one is not a significant one.

### **4.5 Interviews**

According to Blaxter *et al.* (2006), cited in Alshengeeti. (2014), choosing to do interviews is important for researchers as it gives them the chance to access information which is not necessarily accessible using questionnaires and observations. Before the interviews were conducted the researcher sought permission from the respondents to audio-record the interviews. Reasons were provided to the respondents as to why the interviews were required to be audio-recorded. This is in line with Saunders. (2009) assertion that permission must be granted to audio record an interview and that the interviewer must provide reasons for that (Healey and Rawlinson. 1994, cited in Saunders. 2009). A number of separate interviews were conducted with management of the CoCT, water department. Interviews were recorded and later transcribed by a professional.

Semi-structured interviews were used in this study. When using semi-structured interviews, normally the researcher must have a list of questions and themes which the interviewee will answer. The interviews in this study were recorded so that the researcher could fully concentrate but also take notes at the same time and listen attentively to what was being said, as well as to understand the body language of the interviewees while they were responding. Saunders. (2009) explains that in order to produce data which is reliable, as well as reducing bias, interviews may be recorded.

#### **4.5.1 Advantages of recording interviews**

- The interviewer is given room to focus on questioning and listening
- The interviewer may re-listen to the interview
- It enhances a lack of bias since there would be a primary record of information

- They can be used as long-term record for other uses (Saunders. 2009).

#### **4.5.2 Disadvantages**

- If there is a technical problem, then the researcher may lose all the information
- Transcribing an audio is regarded as time consuming and expensive (Saunders. 2009)

As a resident of Khayelitsha, a township suburb where most service protests emanate, the researcher showed up at most community meetings and gatherings where issues relating to service provision were discussed. Theron and Wetmore. (2005), cited in Matibane. (2010), postulate that in participatory observation, variations of conversation and observation are used. Theron and Wetmore. (2005), as cited in Matibane. (2010), suggest that under participatory observation, the researcher has to be a resident of the community for a period of time, which s/he wishes to observe. At the time of the research, the researcher was an employee of the city of Cape Town, so was able to attend some of the staff meetings where issues regarding water and sewerage provision were discussed. These meetings were attended by shop floor workers, middle managers as well as top management.

#### **4.5.3 Importance of observations**

Observations help researchers to understand participants' nonverbal communication which might help to understand how they feel. According to Schmuck. (1997), cited in Kawulich. (2005), observation helps researchers to understand the nature of the relationship between participants and the people that they interact with and how much time they spend performing different activities. According to Marshall and Rossman. (1995), cited in Kawulich. (2005), participant observation provides researchers with an opportunity to understand the meaning of words that are used by participants in interviews. Participant observations also make observers aware of the behaviour that participants would not want to portray if they knew that they were being observed (Kawulich. 2005). Mackellar. (2013) explains that participant observation is useful in situations where participant behaviour needs to be studied as well, but mostly, where other data collection techniques are not suitable.

## **4.6 Summary**

In this chapter the gathered data was analysed and interpreted. This comprehensive process involved examining each response from interviews in order to regulate and review those into a comprehensive description. Furthermore, the challenges that the department is facing in enhancing financial sustainability were presented, as well as the strategies that were identified by the interviewees, in addition to organisational documents.

## **CHAPTER FIVE**

### **FINDINGS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter discusses major conclusions of the research and suggests recommendations which can be taken into consideration in order to achieve financial sustainability of water and sewerage provision in Cape Town. Firstly, the writer critically compares the results of the study with what is already in the body of literature to see if there are similarities or differences. Lastly, the researcher suggests some recommendations which may be used by managers in municipalities in order to enhance financial sustainability.

#### **5.2 Conclusions**

The section below summarises and discusses conclusions regarding the objectives of the research.

##### **5.2.1 Conclusions with Regard to Research Objective 1**

The objective to identify factors affecting financial sustainability of water and sewerage provision has been met. The study shows similarities between the findings of this study (factors) with those of other studies conducted by different researchers on the related topic. These factors are: accessibility (Statistics South Africa. 2016), resources (Statistics South Africa. 2016), culture (Morudu. 2017), human capacity (Westhuizen and Dollery. 2009; Vhonani. 2010), monitoring and evaluation (Kanyane. 2014), planning (Kanyane. 2014), communication (Kanyane. 2014), and affordability (Bekink. 2006). As the researcher is a resident of Khayelitsha, a township in the Western Cape, he has been interacting with the communities at meetings or at social events. One of the factors affecting financial sustainability of water and sewerage provision in Cape Town as suggested by the community members is engagement. Members of the community mentioned that there is lack of engagement between the municipality and society with regards to water issues. Residents feel that they are treated like secondary citizens, therefore this result in non-existence of collaboration between the municipality and the community. Facilities play a bigger role in the sustainability of water and sewerage services. Leaking pipes, faulty meters, and loose taps all lead to more water being lost, which in turn means loss of revenue. Quality of stakeholders' input plays a pivotal role in

enhancing financial sustainability of water and sewerage provision. As the Department relies on private contractors for some services, it is of paramount importance that they adhere to quality control systems put in place by the department. The result of the study on objective one is consistent with what is already in the body of literature.

### **5.2.2 Conclusions with Regards to Research Objective 2**

Research objective 2 was to identify challenges that the Department is facing in moving towards financial sustainability of water and sewerage provision. One of the challenges mentioned by interviewees is the culture of boycotting rates payment. In South Africa, in general, there is culture of reluctance to pay for the services. Residents have a perception that the government must provide these services for free. They also believe that water provision should be a free basic services, quoting from the constitution. Culture can either enhance or undermine the financial sustainability of water and sewerage provision. This might be exacerbated by political leaders who give a perception that the poor must not pay for water and electricity (The Citizen. 2016). Chetty. (2015), concedes that the culture of non-payment for services in South Africa continues to pose a serious financial challenge to local government even after 20 years into democracy.

Another challenge mentioned by interviewees is the high rate of unemployment. High unemployment rates diminish the ability of the residents to pay for municipal services. This notion is supported by a number of researchers. According to Bekink. (2006), many South African residents are not able to pay for basic services. Fjeldstad. (2004), emphasized the fact that a relationship exists between ability and willingness to pay. Most people who are willing to pay, have the ability to pay as well. There are other residents, however, who are able to pay but not are not willing to do so due to the frustration that they endure because of poor service delivery. Kumar. (2013), cited in Pieters. (2015), mentions non-payment by consumers as one of the challenges that affects municipalities' capability in improving their revenue base.

Another difficulty mentioned by the interviewees is the lack of sound financial management models to use in running municipalities. Pieters. (2015), connects the success of service delivery in local governments to a sound revenue system as the provision of goods or services is mainly dependent on the availability of funds. Another challenge confronted by municipalities is the non-existence of structures that enhances municipalities' decision in making effective resource allocation (Chetty. 2015), *"as well as very weak financial*

*compliance management” (Westhuizen and Dollery. 2009). Louis Berger Group. (2010) emphasises that for the government that came into power after 1994 the “legacy of Apartheid left a debt burden that had to be inherited by the government which is unsustainable to bear, resulting in financial setbacks and to deploy necessary resources to overcome.”*

The Department mentioned sufficient staff resourcing, retention of skills, improving productivity in operations and setting up a functional institutional arrangement as critical challenges relating to employee development (WCWDM Strategy. 2015/ 2016). An unskilled workforce is a burden for municipalities as are lack of training, skills shortages, succession planning and skills transfer. Mdlongwa. (2014), emphasises the fact that most municipalities in South Africa lack people with required technical expertise. In most municipalities, inadequate service provision is as a result of a shortage of manpower (Mdlongwa. 2014). A study by Vhonani. (2010), shows that Thulamela Municipality had insufficient capacity due to unfilled vacant posts. The Municipality could not fulfil its task obligations due to the fact that the staff which was there had too much to handle and left other work unattended. Maloba. (2015), also supports the fact that service delivery problems emanates from recruitment difficulties that municipalities face in securing highly qualified experts. According to the Auditor General Report. (2018), *“lack of adequate skills resulted in municipalities poorly implementing and maintaining financial and performance management systems”*.

The shortage of adequate resources such as finance, cars and resources was mentioned as a major challenge by the interviewees. Mdlongwa. (2014), emphasises the fact that most municipalities in South Africa are either broke or are almost broke and as a result the quality of service delivery is affected negatively. It is widely known that in most municipalities, there is a backlog of service delivery. Vhonani. (2010), links service delivery backlogs to constrained budgets. Vhonani. (2010), stresses that limited budgets are partly caused by non-payment for services by residents which causes municipalities to be unable to adequately provide these services to them.

Kanyane. (2014), concurs with Vhonani. (2010), in that poor service delivery by municipalities is as a result of constrained financial resources. Through observations during staff meetings, poor workmanship by private contractors was mentioned as a challenge that the department is facing in enhancing the financial sustainability of water and sewerage provision in Cape Town. Perhaps this is caused by lack of monitoring and evaluation by the Department.

### **5.2.3 Conclusion with Regard to Research Objective 3**

Below is a discussion of the strategies that the Department can undertake in moving towards financial sustainability of water and sewerage provision.

#### **5.2.3.1 *Engagement with communities***

Most of the residents were not satisfied by the level of engagement between themselves and the municipality. This caused residents to feel like they were treated like secondary citizens. This dissatisfaction caused residents to boycott paying rates in protest. Municipalities must create platforms such as community meetings, where they can engage with communities on issues relating to delivery of services. At the same time, these platforms may be used to highlight the importance of paying rates.

#### **5.2.3.2 *Inequality***

In areas where poor residents reside, there is a problem of rates boycotts. This, however, is different from affluent suburbs where the majority can afford to pay the rates. According to research conducted by Afro Barometer. (2017), white residents had the highest satisfaction of the services that they received from their municipalities. In addressing the issue of community empowerment, the Department exceeded its jobs creation target by 17% by creating 5100 job opportunities for members of the local communities. Although this initiative is commendable, it is a drop in the ocean since millions more are still unemployed.

#### **5.2.3.3 *Improve human resources***

This involves training the existing workforce so that they possess the required skills needed to execute their duties. Municipalities must also be swift in filling vacant positions as these vacancies have an effect of paralysing operations. According to Vhonani. (2010), Thulamela Municipality had more than one hundred posts lying vacant and this had an effect of stalling service delivery since the available staff was overwhelmed.

#### **5.2.3.4 *Financial management.***

One of the causes of inadequate service delivery is lack of financial discipline. For the financial year 2016/ 2017, the AG reports that there was a 75% increase in irregular spending by municipalities from the previous year. Also, the reason why some municipalities are facing financial sustainability issues could be non-adherence to standards and regulations. According



to the Auditor General Report. (2018), only 33 % of the municipalities produced quality financial statements and reports as well as complying with all key legislation. *“Municipal capability is assured by solid financial management and good governance and Good governance and financial management are amongst the national key performance areas for municipal managers with regards to municipal performance regulation.”*(AGR. 2018). Mantzaris. (2014) concedes that good governance ensures that sustainability can be achieved with good performance of the municipality. Kanyane. (2011), cited in Mantzaris. (2014), suggests that a municipal budget is the basic mechanism that can be used for financial municipal management. Kanyane. (2011), further says that municipal stakeholders such as mayors must have a concrete understanding of the Municipal Financial Management Act and other legislations, and how they may be applied. The Act enhances effective municipal finance management in local government by creating treasury norms as well as guiding standards for performance.

### **5.3 Conclusion**

- The results of the study indicate that the City of Cape Town, water and sanitation department is facing challenges in developing as well as motivating its employees. This is partly due to lack of adequate funds. The water and sanitation department must mobilize sufficient financial resources in order to develop and retain staff. Mdlongwa. (2014) stresses that paralysis in service provision by municipalities is partly due to a lack of an adequately skilled workforce.
- The CoCT, water and sanitation department must ensure that its revenue collection mechanism is effective and also that all other charges levied against users recover the costs involved in water and sewerage provision. The department must also ensure that the cost of capital is kept at a minimum. While the department is doing a lot to maintain some of its assets like taps, there is still a lot which needs to be done to take care of the rest of the assets. The timely maintenance of the assets will eliminate unnecessary costs and time lost in attending to frequent breakdown of machinery and equipment. The water and sanitation department of Cape Town must also reduce irregular spending. The Auditor General Report. (2018) indicates that most municipalities put themselves under financial distress due to unreasonable spending.

- The water and sanitation department of Cape Town must ensure that any investment in projects relating to water and sewerage provision leads to job creation for the communities of Cape Town. This will go a long way in enhancing the income of the residents and improve their ability to pay for the services provided by the Department. Any waste products from the Department's operations must not compromise the health of the community as this will have an effect on their ability to pay for the water and sewerage services as they will be channelling all their resources towards their health.
- The water and sanitation department of Cape Town must establish community platforms whereby influential leaders of the communities are identified and given roles to play in the debate of issues regarding water and sewerage provision. This will improve participation and understanding by community members since they would feel included in decisions that affect them. The platform may be used to attract divergent views about how to improve service provision as well as to gain trust from the residents. Since the financial resources of the Department are constrained, it would be wise to engage the Provincial Government for additional funding for some projects.

#### **5.4 Recommendations**

- The Water and Sanitation Department must ensure that its employees are developed through continuous training in the area of financial management and financial sustainability.
- There has to be an understanding that water can be reused it is not just for consumption purposes, for instance wastewater can be recycled for potential energy and chemicals could be harvested through it that could result in water projects funding themselves.
- The Water and Sanitation Department must ensure that effective revenue control systems are put in place as well as keeping the cost of capital at a minimum.
- The Water and Sanitation Department must ensure that communities in Cape Town benefit through its projects, in terms of employment and business opportunities.
- The Water and Sanitation Department must promote public participation in determining water tariffs and preparedness of the underprivileged to pay for services.
- The Water and Sanitation Department must ensure effective communication for revenue enhancement by designing an effective communication strategy

- The Water and Sanitation Department must achieve political commitment and alignment of goal in the institution by continuous community engagement and capacity building.
- The Water and Sanitation Department must establish community platforms whereby residents are given roles to play in the debate of issues regarding water and sewerage provision.
- Improve the long and frustrating procurement processes leading to slow service delivery through reducing the number of steps involved in procurement.
- Water and Sanitation management must be well acquainted with the Municipal Financial Management so as to be effective in decision making regarding the management of finances of municipalities.

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## Appendix A

### Research Questionnaire

#### Factors affecting financial sustainability of water and sewerage provision in Cape Town, South Africa

You have been selected to respond to questions contained in this questionnaire. Your responses would be verbal contribution to the on-going investigation into factors affecting financial sustainability of water and sewage provision. *Financial sustainability is meeting the present water and sewerages needs without comprising the need for future generation or producing adverse socio-economic effects.* The verbal responses would be done through recorded personal interview.

**The interviews will take approximately 30 to 45 minutes of your time.**

Please note that this study is in part fulfilment of the requirement for the M Tech: Business Administration at the Cape Peninsula University of Technology and responses received would be used for the stated purpose of academic research only and treated in strict professional confidence.

Thank you for your responses and participation in this study.

Mthandazo Beda

M Tech: Business Administration

CPUT

1. Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.

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2. In your explanation what do you think are the most important financial sustainability factors?

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3. What are the factors to lead to water and sewerage financial unsustainability situation?

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4. Explain the perceived effect each identified factors?

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5. What should be done to minimise the perceived effect of identified factors?

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6. What should be done to improve financial sustainability of water and sewerage provision in the City?

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7. What is needed to manage identified factors?

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8. What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?

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9. What are the obstacles for promoting these improvements?

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10. What management framework can be developed to support financial sustainability?

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11. Which other ways can be used to improve revenue generation?

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12. Explain sources of water and sewerage funding?

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13. Do you think the current funding formula is adequate? Please explain

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14. Can the financial sustainability of water and sewerage provision be achieved: Please explain?

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## **Appendix B**

### **Interview with Head Capital and Operating Budget**

#### **Question 1**

Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.

#### **Response**

Yes I agree, an organisation should always display positive outcomes we I come to its finances. As the municipality we make not enough revenue that can lead to financial difficulty, future generation depends on how well we manage the water resources. With financial shortfalls that can lead to us compromising for future provision.

#### **Question 2**

In your explanation what do you think are the most important financial sustainability factors?

#### **Response**

Water and sanitation collect enough revenue to avoid financial shortfalls and it should preserve water for future generation because water is not replaceable. There is no other commodity to replace water. Water is life.

#### **Question 3**

What are the factors to lead to water and sewerage financial unsustainability situation?

#### **Response**

The first issue that we have as challenge is consumers that are not paying for the service this lead to the city not collecting enough revenue to continue to expand water infrastructure. Even those that are able to pay they don't want to pay. People would rather pay for Dstv instead of paying for water. The department is under pressure to provide water to all citizens but our society does not appreciate the service instead they refused to pay. This lead to financial shortages and not enough recovering of cost at the end of financial year. This happen quite often resulting in the city of Cape Town putting other measures to ensure cost recovery. This

includes debt management process where water is restricted to citizen. The other factor is that the water funding is not enough from provincial and national government. The money we get from the two sphere of government is inadequate as to compare to the demands of the citizens. Water and sanitation is key in our societies hence it is important to fund them adequately. Otherwise the society resort to violence protest etc. There should be a way averting these unnecessary protest that in most of the cases lead to destruction of property and protest vandalising city property.

#### **Question 4**

Explain the perceived effect each identified factors?

#### **Response**

Well the fact that there are citizens that still struggle to get water is not a good image to our department. Other people are still getting water through communal taps, it is not good. Citizens think that we cater for certain sectors only, because of lack of funding and old infrastructure. The lack of infrastructure improvement lead to perception of poor service delivery leading to service delivery parades. The main issue is lack of funding and not enough money to improve infrastructure.

#### **Question 5**

What should be done to minimise the perceived effect of identified factors?

#### **Response**

Provide water to all. Improve infrastructure, we have a very old infrastructure it needs to be improve to cater for all. Our communities needs to be taught to preserve water, report leaks at home and even if you find a leak of the road, report it to your nearest council office or you can even use our tollfree number to report.

#### **Question 6**

What should be done to improve financial sustainability of water and sewerage provision in the City?



**Response**

Water department needs to be stricter in enforcing water by-laws to ensure enough revenue is generated. Improve communication with all citizens through our community outreach programmes. The water demand management and strategy branch should have community outreach programmes to all citizens. Water leaks must be minimised in every corner of Cape Town.

**Question 7**

What is needed to manage identified factors?

**Response**

Well there is no company that does not experience problems. Even well-established top companies sometimes go through difficulties. We should continue engaging each other to improve water provision. Involve many stakeholders as possible. Come up with initiative to improve our service. Most importantly engage community leaders to contribute of all our initiatives. Avoiding repeating steps every financial year, you also know that every financial year we are faced with similar issues when it comes to cost recoveries. That should be avoided, we should manage cost recovery efforts. We also need to simplify procurement processes.

**Question 8**

What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?

**Response**

Debt management processes for revenue generation. Establishment of water demand management department and strategy.

**Question 9**

What are the obstacles for promoting these improvements?

**Response**

Lack of cooperation and not enough engagement in community that we serve. People should understand our city operates, we must teach community about water by laws. Our people do not understand some of these things, how they work and how important is the issue of water.

**Question 10**

What management framework can be developed to support financial sustainability?

**Response**

We have our management which I think is doing all what it can to manage water and sewerage, but still more needs to be done. If you compare city performance with the rest of the country we are doing well. We should continue in this way but as I say more need to be done. Other managers will tell you more but it is good that you are investigating. You are one of us and you are still young. Very work that you are doing it is going to take us forward.

**Question 11**

Which other ways can be used to improve revenue generation?

**Response**

Government must provide enough funding, debt management improvement initiative. Staff must be familiar with debt management, we need to support them all times. Engage councillors in subcouncil meetings etc. non-payments or service must be discouraged citizens should be encouraged to pay not only pay for Dstv. Yes

**Question 12**

Explain sources of water and sewerage funding?

**Response**

Own revenue management, national and provincial funding that's it. If there more I would not be sure, maybe loan what do you call it, I know there is other term it slip my mind.

**Question 13**

Do you think the current funding formula is adequate? Please explain

**Response**

No no not at all, we run out of capital budget all time, you know that. Like I said our funding should be improved. Money coming from national and provincial government is not adequate, it needs to be improved. We should be getting enough grants to develop infrastructure.

**Question 14**

Can the financial sustainability of water and sewerage provision be achieved: Please explain?

**Response**

Only if we work together with national government and enough revenue is generated. Financial sustainability is difficult term I'm not understanding it but if it means to get enough money to provide for service be it. We need to work together with our community. Yes I think it can be possible.

Is that it.

Thank you,

## **Appendix C**

### **Interview with Head Informal Settlement (Water and Sewerage)**

#### **Question 1**

Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.

#### **Response**

Indeed, of course the provision of these services are important now to maintain and to provide for the coming generation. We must make sure we maintain that all the time. We cannot ignore water provision including sewerage. You also understand that, that is why you embark on this research. It is very important for us to survive.

#### **Question 2**

In your explanation what do you think are the most important financial sustainability factors?

#### **Response**

Informal settlement department work differently from other sections but we provide the service but we are faced with number of challenges. We must work under difficult conditions hence it is important to stay focused. Our communities suffer a lot and the areas are not conducive for human inhabitation its very difficult. Informal settlement is too much dense and we operate difficult. Our people don't have enough space its challenge like I said. We need enough resources to improve their situation. You need to be vigilant and be alert all the time.

#### **Question 3**

What are the factors to lead to water and sewerage financial unsustainability situation?

#### **Response**

Informal settlement must be funded alone not through other sections. There is absolute not enough funding to provide water in informal settlement. It needs lot of improvement and I am fighting with the bosses to improve informal settlement funding. I am told that informal settlement is subsidised by national government and the subsidy is not enough. What is that,

we have to battle to get funding hence informal settlement have to stand alone and be funded on its own like I said. There is lots of issues to look at when it comes to informal settlement. You get toy-toy almost every day in informal settlement. People would vandalise standpipes, water will gash through streets because of vandalisms. Our teams must respond to those situations every day. You also faced with new informal structures that erupt everywhere overnight and you are expected to provide service with limited resources. What can you do, you have to work with what you have. You run around wanting material city processes are slow. But you know what we try our best.

#### **Question 4**

Explain the perceived effect each identified factors?

#### **Response**

Of course we are seen not to be serious about service delivery by people we serve. There is too much politics involve in these communities. Our people think that they are neglected we only take services to affluent rich people, we engage them all the time. There is a filling that the treatment they get is not equal to other affluent areas in Cape Town where rich people live. They would question you about housing, roads, and many other issues that we cannot help them with. It is therefore important to have community engagement and explain our role as water and sanitation department.

#### **Question 5**

What should be done to minimise the perceived effect of identified factors?

#### **Response**

Like I said, the informal settlement should be funded as a standalone department. Improve housing provision and water will automatically improve. Meeting the basic needs of society can help and I think housing is important.

#### **Question 6**

What should be done to improve financial sustainability of water and sewerage provision in the City?

**Response**

Enough subsidy for informal settlement.

**Question 7**

What is needed to manage identified factors?

**Response**

Provide housing, engaged citizens on issues relating to informal settlement. Equity of service is very important so that you minimise confusion, and classification of the society.

**Question 8**

What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?

**Response**

Most importantly is funding of informal settlement as an entity on its own. National government should provide enough funding and improve the conditions in informal settlement. It is that simple.

**Question 9**

What are the obstacles for promoting these improvements?

**Response**

What can I say here? Nothing much except improvement of conditions.

**Question 10**

What management framework can be developed to support financial sustainability?

**Response**

Financial sustainability is a very important issue to the establishment of municipality. In managing finance there should be workshops to explain the importance of the term and its

meaning. Managers should be ambassadors of change and should be understand how finance work, yes I think so. Financially developed personnel is important for organisation.

### **Question 11**

Which other ways can be used to improve revenue generation?

### **Response**

We don't collect revenue in informal settlement, it is subsidised by the city and national government. Finance and commercial branch can explain better. Speak to their head of revenue (David Bester) if he is still there.

### **Question 12**

Explain sources of water and sewerage funding?

### **Response**

Please speak to Finance and Commercial department.

### **Question 13**

Do you think the current funding formula is adequate? Please explain

### **Response**

Finance and Commercial department can explain this.

### **Question 14**

Can the financial sustainability of water and sewerage provision be achieved: Please explain?

### **Response**

Yes of course only if what I have given you can be implemented. There is a lot in informal settlement to be addressed, I don't think for now we can speak about such terms as financial sustainability. No not at all.

## **Appendix D**

### **Interview with Manager Revenue Management**

#### **Question 1**

Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.

#### **Response**

If I understand you correctly you are talking of financial viability which is in my understanding relates to how good is our financial situation. Of course that is always a challenge and it is not different with our situation here in the city. We are always faced with not having enough money to provide the water and sanitation. However if we are to provide for the future we need better planning so that in future we do not get shocked by not having enough water. We need to avoid a situation where water runs out completely or a situation where we have to shed the load because of shortages. South Africa is regarded as a scarce water country that is why we have to manage it very carefully.

#### **Question 2**

In your explanation what do you think are the most important financial sustainability factors?

#### **Response**

Good Measurement of cost recovery and financial planning. The revenue collection should always be maximised together with activity based costing. Activity based costing give the department an overview of how much was spend in each activity that the water and sanitation department performs. This will give us a better when estimating the budget for the following financial year. This is very important for financial sustainability of the department.

#### **Question 3**

What are the factors to lead to water and sewerage financial unsustainability situation?



## **Response**

Revenue collection is key, which our section becomes the custodian of revenue collection in the department. Must also ensure that our activities are measured. This involves cost management of our operations and maintenance cost, which has to be minimised for better output. Cost recovery from consumers is important. The national and provincial grants has to be managed very carefully as we are required to report at the end of financial year. As much as the grants are not enough but that is a discussion on its own.

## **Question 4**

Explain the perceived effect each identified factors?

## **Response**

The department must not be perceived as lacking capacity to provide to our citizens, that is not a good image. We must try by all means to try and mitigate that perception it is not good to the image of the department. Funding needs to improve and revenue collection should be improved together with infrastructure development. This will also avert community parades.

## **Question 5**

What should be done to minimise the perceived effect of identified factors?

## **Response**

Water department needs to be stricter in enforcing water by-laws to ensure enough revenue is generated. Improve communication with all citizens through our community outreach programmes. The water demand management and strategy branch should have community outreach programmes to all citizens. Water leaks must be minimised in every corner of Cape Town.

## **Question 6**

What should be done to improve financial sustainability of water and sewerage provision in the City?

**Response**

So, the first point of departure will be to enforce debt management processes for those that are not committing to pay for services. The department must collect enough revenue for its financial viability. Our communities have to be involved in the process of tariff setting to get a buy in, this can be done through our water demand management and strategy department.

**Question 7**

What is needed to manage identified factors?

**Response**

The major contributing factor to financial sustainability is consumers that are not committed to pay for services. Those have to be addressed before anything else, our department has to be tough on enforcing the rules for payment. We need to engage community through community based councillors to address water related issues. Optimising cost recovery is key, develop an attitude of our community to pay for services.

**Question 8**

What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?

**Response**

The department must avoid mismanagement of resources and finances. Develop a clear plan and expenditure must be in line with the budget. If money is put aside for a particular project like infrastructure development should not be diverted to other self-made emergencies. Diversion of funds sometimes results in deferring important infrastructure projects that are key to the community based services. The rehabilitation of infrastructure is an important element to water and sewerage provision. It is said that our infrastructure is old and needs to be rehabilitated for it to be able to cope with the demand.

**Question 9**

What are the obstacles for promoting these improvements?

**Response**

Obstacles involve funding, revenue collection, upfront payment for services. Tariff increases is also essential in the municipality but there are really people that are struggling to pay which government has to look at. Give them subsidy that is sufficient for cover the operational and maintenance cost of infrastructure.

**Question 10**

What management framework can be developed to support financial sustainability?

**Response**

Improve and retain personnel that is financially developed. It is also important to train staff in all areas of finance relating to municipal finance and procurement process. Municipal finance management is really important to guide all officials in managing finances in their respective areas of work.

**Question 11**

Which other ways can be used to improve revenue generation?

**Response**

Our department can only survive if it generates enough revenue so tariff setting is an important element. Tariff setting should be in line with the expenditure for us to be able to collect enough revenue. However revenue can never be enough but revenue collection should at least cover for operational and maintenance cost of infrastructure. The funding of the local government by both national and provincial spheres of government needs to be revised. There is just not enough funding for local government especially informal settlement dwellers.

**Question 12**

Explain sources of water and sewerage funding?

**Response**

The funding of water and sewerage is based mainly of own revenue generation, secondly the grants from national government and provincial government this money is mainly used for

projects. Thirdly, the loans that we borrow from private entities and that is paid back with interest this money is also used mainly for capital projects to enhance infrastructure.

### **Question 13**

Do you think the current funding formula is adequate? Please explain

### **Response**

I think this is one of the areas that needs lot of improvement, the funding of local government needs to be improved like I said earlier. Local government is the core of service delivery and if the funding is not adequate we will continue to experience community unrest.

### **Question 14**

Can the financial sustainability of water and sewerage provision be achieved: Please explain?

### **Response**

Financial sustainability can be achieved if only we work together and we continue to explore other ways of improving service provision like you are doing. Maybe we need to send our official to other countries for find out how they are doing and what have been put in place to improve service provision. People like you are important to provide knowledge about other models that are being use elsewhere.

## **Appendix E**

### **Interview with Manager Scientific Services**

#### **Question 1**

Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.

#### **Response**

Financial sustainability is important for future provision of service. The city should understand its business in line with the constitutional mandate in the provision of water and sewerage services. We have a constitutional obligation to provide community with sustainable basic service. We must ensure we carry that mandate forward for future generation as well. Local government is obliged to provide water and sewerage that we cannot run away from whether we like it or not. The future generation will depend on the same resources like water which is not substituted.

#### **Question 2**

In your explanation what do you think are the most important financial sustainability factors?

#### **Response**

We need to follow legislation, we should not deviate from that otherwise it can bring lot of trouble. We should provide sustainable water and sewerage to all capetonians, ensure that service is paid for by society. Establish budget and not deviate from the planned budget. Enhance infrastructure to avoid infrastructure collapsing. Recovery cost for revenue generation so that future projects can be funded.

#### **Question 3**

What are the factors to lead to water and sewerage financial unsustainability situation?

#### **Response**

There is a tendency of not wanting to pay for services this is impacting of the city financial status and departments become vulnerable. Which should minimise water leaks inside

households and outside leaks on the infrastructure. Tariffs are not adequately planned to cover operational and maintenance costs, this relates to revenue collection which we have a dedicated section that deals with that, they need to up their game.

#### **Question 4**

Explain the perceived effect each identified factors?

#### **Response**

Lack of service due to budget constraints this leads to community protesting for lack of service. Water demands exceeds water that is available this results in water restrictions. There be workshops about mitigation of water leaks and community is an important element. This can be done through subcouncil meetings to explain its importance.

#### **Question 5**

What should be done to minimise the perceived effect of identified factors?

#### **Response**

Engage community about the importance to conserving water. Councillors should be ambassadors of the department they must be equipped to understand water issues so that in their community meetings they speak about water related issues. Councillors can also invite water officials to be part of their subcouncil meetings. Leaks for should be dealt with inside and outside properties.

#### **Question 6**

What should be done to improve financial sustainability of water and sewerage provision in the City?

#### **Response**

Each water branch should understand its business because sometimes responsibilities are not clearly stipulated. We should minimise duplication of duties and span of control. For instance my branch deals with testing of samples, I have my own staff but inspectors that deal with community issues are in other departments. When samples are collected other departments must deal with explaining the results which is not their core function.

**Question 7**

What is needed to manage identified factors?

**Response**

We should stick to buy laws and there is municipal acts that protects us in executing our duties.

**Question 8**

What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?

**Response**

We have a department that deals with water demand management and strategy. Community engagements are done to improve communication with the community. But this is sometimes very minimal it needs to be improved.

**Question 9**

What are the obstacles for promoting these improvements?

**Response**

Procurement processes that are taking for ever to complete. This area is vital but needs to be simplified and it needs to be more flexible during emergency situation. Political interference can sometimes be an serious challenge, when it comes to councillors that are making promises during the campaign periods which sometimes come back to haunt them. Promising free service to gain votes compromises the city initiatives necessary cost for operations and maintenance of infrastructure.

**Question 10**

What management framework can be developed to support financial sustainability?

**Response**

Each department in water and sanitation should understand its business and clarify processes. Management should be equipped with the necessary skills required to manage the allocated

budget. We should stop promoting people because we like them, promotion should be based on performance and skills. Retention of qualified staff is important for sustainability of water provision.

### **Question 11**

Which other ways can be used to improve revenue generation?

### **Response**

Government funding of municipalities should be improved, there is just not enough funding of municipalities and most services are provided by municipalities. Debt management should encourage payment of services to generate enough revenue. Increase tariffs as per systems act of the municipality. Subsidise informal settlement dwellers.

### **Question 12**

Explain sources of water and sewerage funding?

### **Response**

Funding is revenue generation

Funding from national government

loans

### **Question 13**

Do you think the current funding formula is adequate? Please explain

### **Response**

It can never be adequate, we struggle to get funding all the time. Be it to improve infrastructure or for new innovation measure, there is always a need for funding.

### **Question 14**

Can the financial sustainability of water and sewerage provision be achieved: Please explain?



**Response**

We are forced to consider financial status of our department, it is essential and should be achieved under any circumstances. It is possible, it might not be now but we have to work towards that.

## **Appendix F**

### **Interview with Head Finance and Administration**

#### **Question 1**

Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.

#### **Response**

Mthandazo, we have a department that deals with our financial issues. Are you sure I'm the correct person to interview, but in any way my understanding of financial matters of water might be very limited since I'm new in the department. But financial matters as relating to my section are based on administration and activity based costing from various depots. It would be important that our department manage all water related projects to avoid day zero and to continue providing water to all people. This will guarantee continuation of water provision to future generations. I am not sure if I have answered your question correctly but that is how I understand your question.

#### **Question 2**

In your explanation what do you think are the most important financial sustainability factors?

#### **Response**

We should be able to measure our expenditure, this is based on the activity based costing that we are embarking on. Activity based costing will allow better budgeting so that we avoid veriments during the financial year. Cost recoveries for operational and maintenance cost is important.

#### **Question 3**

What are the factors to lead to water and sewerage financial unsustainability situation?

#### **Response**

The culture of non-payment of services by customers should be discouraged, we need to develop a new culture of willingness to pay for service so that the city is adequately equipped

to provide quality service. Our people should move away from not wanting to pay or boycotting payments. That will allow for more people to have access to service because there is still a number of residents that do not have access to adequate water and sanitation service.

#### **Question 4**

Explain the perceived effect each identified factors?

#### **Response**

Water and sewerage provision is not adequately met leading to protest. Collapse of infrastructure due to old infrastructure not being rehabilitated, this may lead to compromising for future provision.

#### **Question 5**

What should be done to minimise the perceived effect of identified factors?

#### **Response**

Funding of water and sewerage should be enough. Government should give enough subsidies to poor communities like informal settlement where the department is not recovering any cost since the service is provided for free.

#### **Question 6**

What should be done to improve financial sustainability of water and sewerage provision in the City?

#### **Response**

People that are able to pay should be forced to pay for services through water restrictions that will make them to realise how important is to pay for water. Enforce debt management processes, and subsidies the poor.

#### **Question 7**

What is needed to manage identified factors?

**Response**

Tough water restrictions, community engagement, renewal of water infrastructure. Community meetings that will encourage community participation in municipal processes. Better planning for unforeseen circumstances, like emergency relief. Department should not defer infrastructure renewal projects.

**Question 8**

What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?

**Response**

I am not really sure

**Question 9**

What are the obstacles for promoting these improvements?

**Response**

Interference by councillor this hinders processes, lack of support from senior management.

**Question 10**

What management framework can be developed to support financial sustainability?

**Response**

Training is necessary and should be continuous. Encourage all levels and departmental managers to be financially skilled. Understanding of Municipal finance management act is crucial. Promotion of personnel should be based on merit and hard work not chomie chomie.

**Question 11**

Which other ways can be used to improve revenue generation?

**Response**

The most important this is cost recovery measurement. Paying for service should be encouraged. Tariff increase and leak detection inside and outside properties.

**Question 12**

Explain sources of water and sewerage funding?

**Response**

Own funding through revenue generation and I also know that the national government funds water. There is also grants from private sector which must be paid back. I'm not sure if there is any other funding method.

**Question 13**

Do you think the current funding formula is adequate? Please explain

**Response**

It is not adequate lots of improvement is needed

**Question 14**

Can the financial sustainability of water and sewerage provision be achieved: Please explain?

**Response**

Financial sustainability is necessary it has to be achieved. There is no other explanation we are forced to provide water now and for future generation.

## **Appendix G**

### **Interview with Manager Reticulation**

#### **Question 1**

Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.

#### **Response**

Well for me what is importance is to continue providing water and sewerage without failing the community if that happen it will satisfied. Of course we will have to think of the future also because they will also have to depend on the same service for their survival. We will have to think about many ways to conserve what water like fixing leaks in properties and be proactive in managing burst pipes, if we react quickly to emergency situation. That will ensure water is conserved all the time.

#### **Question 2**

In your explanation what do you think are the most important financial sustainability factors?

#### **Response**

We should conserve water because South Africa is amongst the water scarce countries so it is important for everyone survival. We should maintain infrastructure adequately to avoid collapse, rehabilitation will allow for expansion and water provision in future.

#### **Question 3**

What are the factors to lead to water and sewerage financial unsustainability situation?

#### **Response**

Lack of funding from other spheres of government is not good. Cost recovery is also important for maintenance of infrastructure. We should collect revenue for the services that we provide.

**Question 4**

Explain the perceived effect each identified factors?

**Response**

Service provision should be adequate to all. Lack of service provision in certain communities is not good for our image. We should always follow and maintain our service charter when we provide standard service to our customer. We should be guided by what we have agreed upon with regards to our business operational model.

**Question 5**

What should be done to minimise the perceived effect of identified factors?

**Response**

Maintain quality service provision across all communities that we serve. Urgently attend to emergency situation in line with service charter.

**Question 6**

What should be done to improve financial sustainability of water and sewerage provision in the City?

**Response**

Minimise operational and maintenance cost. Improve cost recovery. Increase revenue. Encourage customer interaction.

**Question 7**

What is needed to manage identified factors?

**Response**

Train you personnel,

Develop management techniques to manage debt,

Conserve water by repairing leaks,

Minimise unmetered water,

Deal with illegal connections

### **Question 8**

What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?

### **Response**

Establishment debt management section and water demand management and strategy are some of the initiatives that we have established.

### **Question 9**

What are the obstacles for promoting these improvements?

### **Response**

The main issue is lack of support by councillors in our communities, illegal connections are also some of the challenges we are facing. Infrastructure that is old that needs to be replaced.

### **Question 10**

What management framework can be developed to support financial sustainability?

### **Response**

Training is required at all levels on municipal finance management act. Financial understanding of how to deal with municipal finances in general.

### **Question 11**

Which other ways can be used to improve revenue generation?

### **Response**

Enforce water by-laws, improve debt management collection.

Increase revenue stream.



**Question 12**

Explain sources of water and sewerage funding?

**Response**

No answer

**Question 13**

Do you think the current funding formula is adequate? Please explain

**Response**

No answer

**Question 14**

Can the financial sustainability of water and sewerage provision be achieved: Please explain?

**Response**

Yes we can achieve by working together to address the challenges that are facing us

## **Appendix H**

### **Interview with Business Partner**

#### **Question 1**

Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.

#### **Response**

Yes indeed sustainability is forward looking in a much as you are benefiting now, you should not forget about the future. I certainly agree. Furthermore the future will depend on how well we preserve what we have now for them to be able to enjoy the same benefits as we are. But if we are not preserving or conserving what we have that might hurt the future of the generations to come.

#### **Question 2**

In your explanation what do you think are the most important financial sustainability factors?

#### **Response**

I think we need to be forward looking whenever we doing business, it is important that we preserve what we have. But that we are ensuring that the future generations benefit from the resources that we are benefiting.

#### **Question 3**

What are the factors to lead to water and sewerage financial unsustainability situation?

#### **Response**

To me the main factors that we do not have enough financial funding to provide water and sewerage. The other factor is that our country is recognised a scarce water country which means that our water resources is not enough and can lead to future generation or the forthcoming generation not having enough water to sustain themselves if we do not converse and ensure water is preserve for future. It is therefore very important to build enough catchment plants, dams and reservoirs, this will ensure that during rainy seasons we catch enough water

to sustain us and for the future. Hence my fight main point on this was the fact that we need more funding to enhance our infrastructure.

#### **Question 4**

Explain the perceived effect each identified factors?

#### **Response**

Perceived effect will be that we do not provide sufficient water to all the communities in Cape Town, together not all residents has flush toilets. This in the past has led to the phenomenon of community uprising against poor service delivery, leading to the destruction of property etc.

#### **Question 5**

What should be done to minimise the perceived effect of identified factors?

#### **Response**

Quite importantly we are to provide equitable service to all as required by our constitution. It is very important that we live up to the supreme law of the land were our service reach everybody in Cape Town. There should not be communities that feel that they are neglected leading to unnecessary riots which sometimes are very much relevant as the issues raised relate to basic needs of the community or of the people.

#### **Question 6**

What should be done to improve financial sustainability of water and sewerage provision in the City?

#### **Response**

The government need to improve the funding mechanism of all municipalities, especially for poor people, informal settlement etc. If we are to achieve financial sustainability we need to increase tariffs and ensure that people that are able to pay for services are encourage to pay if they are still not paying debt management should kick in. we sometimes have to be tough on noncompliance if people are not paying we are force to restrict the service so that they can come forward and make arrangement to pay. Because, you will find in some of the instances its unlike people cant pay it is just a mere sabotage not to pay for services.

**Question 7**

What is needed to manage identified factors?

**Response**

There should be paradigm shift in our communities. That can only be done if water management change the way they are doing things. We need to provide training to our staff be able to realise how important it is that we are dealing with. Training therefore is key to improving the standard of service delivery in our country. We also have to collect sufficient revenue before we can even think of asking the national and provincial government to give us more money.

**Question 8**

What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?

**Response**

Increase revenue is key to tackle financial shortfalls, the finance and commercial is being discussed to continue with its efforts of debt management enforcement efforts. Water restriction are in place.

**Question 9**

What are the obstacles for promoting these improvements?

**Response**

Political support is one of the challenges that we face. Promises made by politicians to their constituencies sometimes are unrealistic.

**Question 10**

What management framework can be developed to support financial sustainability?

**Response**

Financial management training is needed at all levels of management including general staff. New management paradigm shift to deal with water issues is certainly needed.

**Question 11**

Which other ways can be used to improve revenue generation?

**Response**

Community involvement when tariffs are set. Consultation with councillors about importance of paying for services.

**Question 12**

Explain sources of water and sewerage funding?

**Response**

Society paying for services to generate enough revenue, national and provincial government funding.

**Question 13**

Do you think the current funding formula is adequate? Please explain

**Response**

Not at all, we need government to concentrate more on local municipalities because that is where bulk of service is happening. More funding is needed at this sphere of government.

**Question 14**

Can the financial sustainability of water and sewerage provision be achieved: Please explain?

**Response**

It can be achieve if proper mechanism can be put in place together communities realising that it is important to pay for services.

## **Appendix I**

### **Interview with Head Project Implementation and Logistics**

#### **Question 1**

Financial sustainability is meeting present generation demands without comprising the needs of future generation or producing adverse socio-economic effects: Do you agree with this statement? Please explain.

#### **Response**

This is a ground breaking research, of course financial sustainability is providing now but also consider the near future. We should be able to sustain our water and sewerage service provision and also think of the future. It is very true that water has no substitute it is important to conserve.

#### **Question 2**

In your explanation what do you think are the most important financial sustainability factors?

#### **Response**

Our department should be able to generate enough revenue to sustain itself and the funding from central government needs to increase for us to be able to sustain our finances.

#### **Question 3**

What are the factors to lead to water and sewerage financial unsustainability situation?

#### **Response**

The main issue that we all aware of the unwillingness of our communities to pay for municipal services this is a major issue that needs everybody's intervention to resolve it. We need interventions to stimulate our society to realise how important is to pay for municipal services.

#### **Question 4**

Explain the perceived effect each identified factors?

**Response**

The effects of these factors is huge, as it lead to community unrest that eventually lead to property destruction by unhappy communities. This needs to be addressed.

**Question 5**

What should be done to minimise the perceived effect of identified factors?

**Response**

We needs intervention from all stakeholders, initiatives from the municipality to encourage payment of services as well as central government addressing insufficient funding model of local government. Communities' awareness campaigns to make them aware to the importance of paying for services is also needed.

**Question 6**

What should be done to improve financial sustainability of water and sewerage provision in the City?

**Response**

Our department must do all it can to increase revenue generation. This can be done by involving the community when tariffs are set. We also need to realise how crucial is to fix leaks to conserve water by all cost.

**Question 7**

What is needed to manage identified factors?

**Response**

Dedicated staff and management is needed to manage this factors. Maybe change in the way we are currently doing things. Community awareness is crucial for them to report water leaks whether inside or outside their properties.

**Question 8**

What kind of efforts which Cape Town has encouraged to manage water and sewerage financial risk?

**Response**

Leak project has been established at our water demand management branch but more needs to be done. Our revenue I am told has slight increase which is a positive sign.

**Question 9**

What are the obstacles for promoting these improvements?

**Response**

As I continue to attend sub council meetings I realise that our councillors have a different perspective from what we have. The promises that they make are sometimes not realistic. Councillors supposed to be ambassadors of the city but instead they do not support the initiatives that the city establishes. So political backup is still a big challenge.

**Question 10**

What management framework can be developed to support financial sustainability?

**Response**

We need to have management who understand clearly how to run finances and are keen to address issues of financial sustainability of our water and sewerage provision. There has to be serious interventions for us to maintain high level service provision.

**Question 11**

Which other ways can be used to improve revenue generation?

**Response**

As I said community intervention are crucial to address payment of services. People need to realise that we are in this together, we are dependent on strenuous water resources and the resources are stretched.



**Question 12**

Explain sources of water and sewerage funding?

**Response**

I know of national and provincial government, own revenue generation is the main funding mechanism and has to be achieved at all cost.

**Question 13**

Do you think the current funding formula is adequate? Please explain

**Response**

It can never be adequate. Central government needs to increase the funding of municipalities. We cannot depend of grants and loans.

**Question 14**

Can the financial sustainability of water and sewerage provision be achieved: Please explain?

**Response**

Yes it is possible to achieve financial sustainability. We need all stakeholders to work together, communities, management, national government, provincial government, all have to put a concerted effort to achieve financial sustainability.

## **Appendix J**

### **Community Observation findings**

This is based on observations sought by the researcher in randomly selected areas and meeting observations. This helps the researcher to determine the attitude of local activities towards water and sewerage related activities, i.e. local traders, citizens, local sheebens, sub-council meetings, etc)

- Long and frustrating procurement processes leading to lack of service delivery
- Lack of knowledge about financial municipal management act
- Lack of training and skill shortage, succession planning and skills transfer
- Too much time spent in meetings, resulting in lack of service delivery
- Lack of implementation and action orientated focus
- Poor workmanship by private contractors
- Lack monitoring and evaluation with regards to poor workmanship by private contractors.
- Lack to handover of project after completion by private contractors.
- Lack standardise procurement and systematic processes (requisitions, reservations, request for quotation)
- Systematic and protest attitude towards paying for water by both informal traders and formal traders, (Apartheid legacy).
- Unwillingness and reluctance to pay for water usage by general citizenry both by formal and informal areas
- Believe that water should be free basic services, quoting from the constitution.
- Use of hose pipe to wash dry areas and controlling of blowing of sand.
- Unattended leaks and sewerage blockages that are not attended in time (inside and outside properties or residences.
- Unmetered water and leaks particularly in informal areas.
- Consistence of service provision that lead to protest and unwillingness to pay for service. Citizens would rather pay for DStv instead of water.
- Lack of unware-ness campaigns, regarding how the WDM device meter operates including ceased meters and types of meter being used in different areas.
- Unfulfilled promises by officials and passing of the buck (it is not my job but no clean information being seek to address the issue at hand)

- Negligence by official in attending to complaints in due time.
- Lack of information as to who to contact when faced with water or sewerage related problems.
- No call centre awareness and resources to call to the call centre (in any way to wait for ever when you try to contact the call centre.
- Lack of knowledge and no nearest walk in centres (walk in centres not publicly known).
- Lack of knowledge about walk in centres and sub council offices (no hope that area councillors would anyway address their plight of the community which results in protest)
- Feeling of being created as secondary citizens (informal settlement and surrounding areas)
- No information about registering illegal car wash bays,
- Lack of knowledge and ignorance of water by-laws (times provided on by-law not observed)
- Non-compliance with water by laws (information not publicly known by most randomly selected informants)
- No meter readings rounds and water accounts
- Information provided for by local councillors misleading (should not pay water as it is an essential service).
- No inspectors in certain areas (never had of water inspector, rather go straight to municipal offices or wait and stop any municipal vehicle they passing by to have problem attended to)
- Municipal offices too far to travel and lack of resources to report water and sewerage complaints.
- No municipal vehicles or official are seen in areas when assistance is required.
- Vandalism and theft of standpipes by unknown people.
- Theft of manhole covers and tapes (for traps to make quick money).
- Municipality should consider using plastic taps instead of brass fittings.
- No community representative as promised by councillors
- Work opportunities given to relatives or comrades (no representatives from areas hence protest)
- Lack of transparency by municipality when jobs are advertised (no money to by newspapers) consider using local news-papers when advertising jobs.

- More meetings with local councillors and relevant municipal officials to address the complaints of citizens.
- Lack of awareness about sub-council meetings and when the meeting takes place.
- Estimated accounts and huge bills not affordable
- Lack of work opportunity and high illiteracy rate
- General ignorance leading to water wastage and sewerage blockages
- Lack of facilities and wheeler bins hence you will find citizens throw dirty in storm water drains causing blockages.
- Lack of toilet facilities and stand pipes (citizens prefer a toilet and standpipe for each not 5 families or more using one facility).
- Lack of houses leading to protest and non-cooperation by citizens to pay for services. (why pay for a god given commodity, constitutional rights)
- Work not attended in time resulting in service delivery.
- Increase in crime resulting in leaks not reported at night and due to theft and water wastage (House breaking, car breaking etc.)
- Lack of police visibility leading to lack of trust that lead to service delivery protest and vandalism
- Lack of employment opportunities for local citizens.
- Unlicensed local sheebens that closed to lack resulting in perpetuating of crime.
- Mushrooming of illegal and unlicensed sheebens leading to abuse of alcohol and drugs that results in vandalism of standpipes to get quick cash for drugs.
- Mushrooming of car wash bays not being monitored resulting in water wastage.
- General lack of knowledge and ignorance by citizens.